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93599

Access DB# \_\_\_\_\_

**SEARCH REQUEST FORM**

Scientific and Technical Information Center

Requester's Full Name: Hong Lu Examiner #: 77011 Date: 5/8/03  
 Art Unit: 1624 Phone Number 30 6-5814 Serial Number: 09/984,631  
 Mail Box and Bldg/Room Location: 4601 Results Format Preferred (circle): PAPER DISK E-MAIL

**If more than one search is submitted, please prioritize searches in order of need.**

\*\*\*\*\*  
 Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

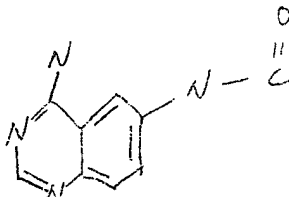
Title of Invention: \_\_\_\_\_

Inventors (please provide full names): Himmelsbach F Langkopf E Jung B  
Bleah S Solca F

Earliest Priority Filing Date: \_\_\_\_\_

**\*For Sequence Searches Only\* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.**

Barb please



Point of Contact:  
 Barb O'Brien  
 Technical Information Specialist  
 STIC CM1 6A05 308-4291

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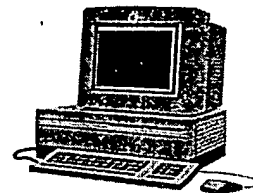
	Type of Search	Vendors and cost where applicable
Searcher: <u>603</u>	NA Sequence (#) _____	STN <u>246</u>
Searcher Phone #: _____	AA Sequence (#) _____	Dialog _____
Searcher Location: _____	Structure (#) <u>1</u>	Questel/Orbit _____
Date Searcher Picked Up: _____	Bibliographic _____	Dr.Link _____
Date Completed: <u>5-12-03</u>	Litigation _____	Lexis/Nexis _____
Searcher Prep & Review Time: <u>30</u>	Fulltext _____	Sequence Systems _____
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Online Time: <u>25</u>	Other _____	Other (specify) _____

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# Biotech-Chem Library

## Search Results

### Feedback Form (Optional)



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The search results generated for your recent request are attached. If you have any questions or comments (compliments or complaints) about the scope or the results of the search, please contact *the BioTech-Chem searcher* who conducted the search *or contact*:

Mary Hale, Supervisor, 308-4258  
CM-1 Room 1E01

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### *Voluntary Results Feedback Form*

➤ *I am an examiner in Workgroup:* (Example: 1610)

➤ *Relevant prior art found, search results used as follows:*

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

*Types of relevant prior art found:*

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ *Relevant prior art not found:*

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Search results were not useful in determining patentability or understanding the invention.

**Other Comments:**

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Drop off completed forms at the Circulation Desk CM-1, or send to Mary Hale, CM1-1E01 or e-mail [mary.hale@uspto.gov](mailto:mary.hale@uspto.gov).

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=> fil reg; d stat que 130; fil capl; d que nos 131; fil uspatf; d que nos 132  
FILE 'REGISTRY' ENTERED AT 11:05:11 ON 12 MAY 2003  
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DICTIONARY FILE UPDATES: 11 MAY 2003 HIGHEST RN 514167-89-6

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2003

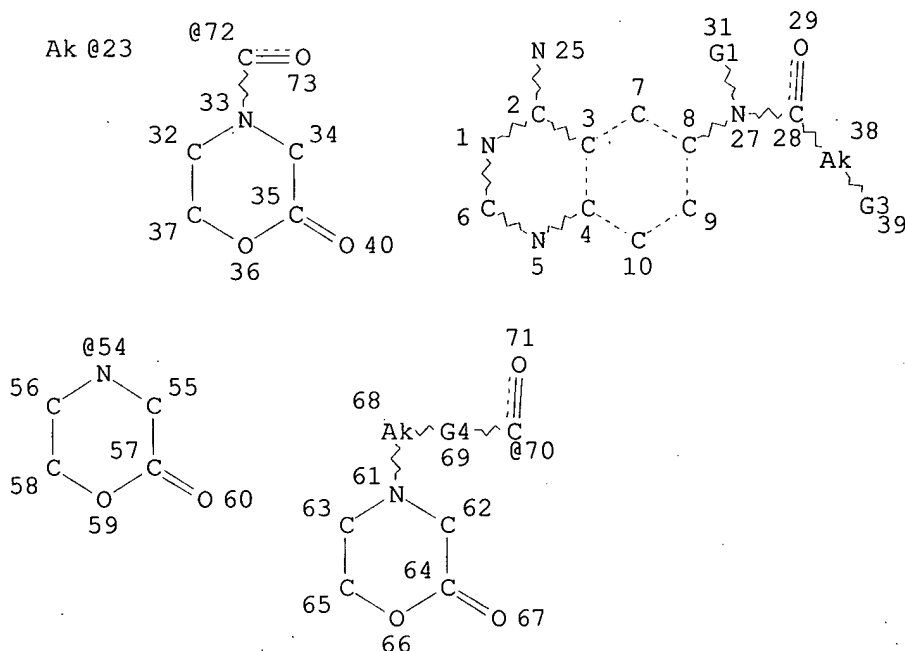
Please note that search-term pricing does apply when  
conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. See HELP  
PROPERTIES for more information. See STNote 27, Searching Properties  
in the CAS Registry File, for complete details:  
<http://www.cas.org/ONLINE/STN/STNOTES/stnotes27.pdf>

L28

STR



VAR G1=H/23  
VAR G3=54/72/70  
REP G4=(0-1) Q  
NODE ATTRIBUTES:  
CONNECT IS E1 RC AT 23  
DEFAULT MLEVEL IS ATOM  
GGCAT IS UNS AT 38  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 45

STEREO ATTRIBUTES: NONE

L30 46 SEA FILE=REGISTRY SSS FUL L28

100.0% PROCESSED 71 ITERATIONS

46 ANSWERS

SEARCH TIME: 00.00.02

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FILE LAST UPDATED: 11 May 2003 (20030511/ED)

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L28 STR

L30 46 SEA FILE=REGISTRY SSS FUL L28

L31 3 SEA FILE=CAPLUS ABB=ON L30

FILE 'USPATFULL' ENTERED AT 11:05:11 ON 12 MAY 2003

CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 8 May 2003 (20030508/PD)

FILE LAST UPDATED: 8 May 2003 (20030508/ED)

HIGHEST GRANTED PATENT NUMBER: US6560778

HIGHEST APPLICATION PUBLICATION NUMBER: US2003088899

CA INDEXING IS CURRENT THROUGH 8 May 2003 (20030508/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 8 May 2003 (20030508/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2003

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2003

>>> USPAT2 is now available. USPATFULL contains full text of the <<<  
>>> original, i.e., the earliest published granted patents or <<<  
>>> applications. USPAT2 contains full text of the latest US <<<  
>>> publications, starting in 2001, for the inventions covered in <<<  
>>> USPATFULL. A USPATFULL record contains not only the original <<<  
>>> published document but also a list of any subsequent <<<  
>>> publications. The publication number, patent kind code, and <<<  
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substance identification.

L28 STR  
L30 46 SEA FILE=REGISTRY SSS FUL L28  
L32 2 SEA FILE=USPATFULL ABB=ON L30

=> dup rem 131,132

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CA INDEXING COPYRIGHT (C) 2003 AMERICAN CHEMICAL SOCIETY (ACS)  
PROCESSING COMPLETED FOR L31  
PROCESSING COMPLETED FOR L32  
L34 5 DUP REM L31 L32 (0 DUPLICATES REMOVED)  
ANSWERS '1-3' FROM FILE CAPLUS  
ANSWERS '4-5' FROM FILE USPATFULL

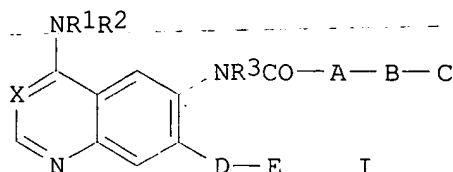
=> d ibib abs hitstr 1-5; fil cao; d que nos 133; fil hom

~~L34~~ ANSWER 1 OF 5 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2002:171892 CAPLUS  
DOCUMENT NUMBER: 136:216762  
TITLE: Preparation of 4-amino-6-heterocyclylcarbonylaminoquin  
azolines as epidermal growth factor receptor signal  
transduction inhibitors  
INVENTOR(S): Himmelsbach, Frank; Langkopf, Elke; Jung, Birgit;  
Blech, Stefan; Solca, Flavio  
PATENT ASSIGNEE(S): Boehringer Ingelheim Pharma Kg, Germany  
SOURCE: PCT Int. Appl., 53 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002018376	A1	20020307	WO 2001-EP9536	20010818
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RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
DE 10042062	A1	20020307	DE 2000-10042062	20000826

AU 2001095482	A5	20020313	AU 2001-95482	20010818
US 2002115675	A1	20020822	US 2001-934631	20010822
PRIORITY APPLN. INFO.:			DE 2000-10042062	A 20000826
			US 2000-230542P	P 20000905
			WO 2001-EP9536	W 20010818

OTHER SOURCE(S): MARPAT 136:216762  
GI



AB Title compds. [I; X = N, (substituted) methynyl; R1 = H, Me; R2 = (substituted) Ph, PhCH2, 1-phenylethyl; R3 = H, Me; A = (substituted) vinyl, ethynyl, 1,3-butadien-1,4-yl; B = (substituted) alkenyl, alkenylcarbonyl, etc.; C = (substituted) 2-oxomorpholin-4-yl, etc; D = oxyalkenyl, O; E = (substituted) amino, alkenylimino, imidazolyl, cycloalkyl; or DE = H, (substituted) alkoxy, etc.], were prepd. Thus, 4-[(3-chloro-4-fluorophenyl)amino]-6-[(4-[N-(ethoxycarbonylmethyl)-N-((R)-2-hydroxy-3-methoxypropyl)amino]-1-oxo-2-buten-1-yl)amino]-7-cyclopropylmethoxyquinazoline (prepn. given) and MeSO2OH in MeCN were stirred for 4 h under reflux to give 69% 4-[(3-chloro-4-fluorophenyl)amino]-6-[(4-[(R)-2-methoxymethyl-6-oxomorpholin-4-yl]-1-oxo-2-buten-1-yl)amino]-7-cyclopropylmethoxyquinazoline. The latter inhibited epidermal growth factor (EGF)-dependent proliferation of F/L-HERc cells with IC50 = 2 nM. The invention relates to the use of the title compds. for treating tumor diseases, and lung and respiratory tract disorders.

IT 402569-98-6P 402569-99-7P 402570-00-7P  
402570-01-8P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

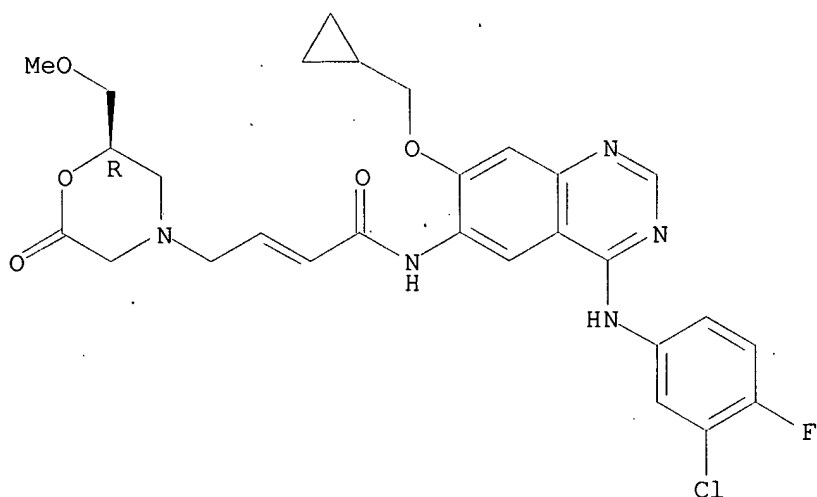
(prepn. of (amino)(heterocyclylcarbonylamino)quinazolines as epidermal growth factor receptor signal transduction inhibitors)

RN 402569-98-6 CAPLUS

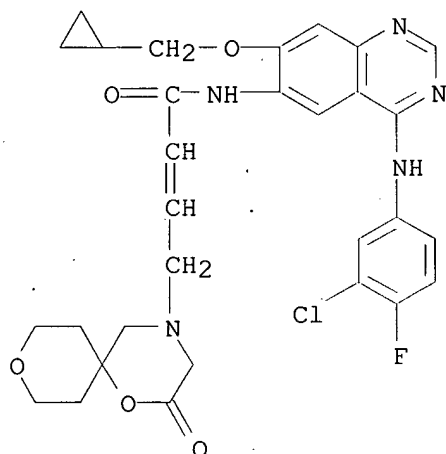
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(2R)-2-(methoxymethyl)-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

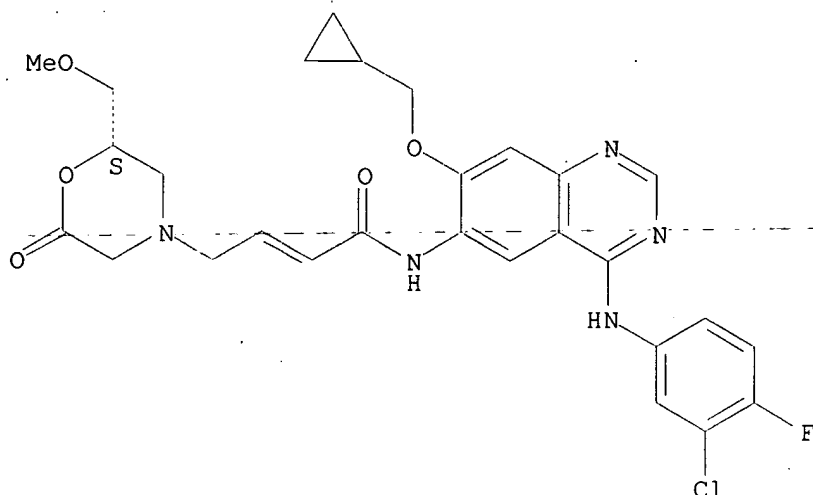


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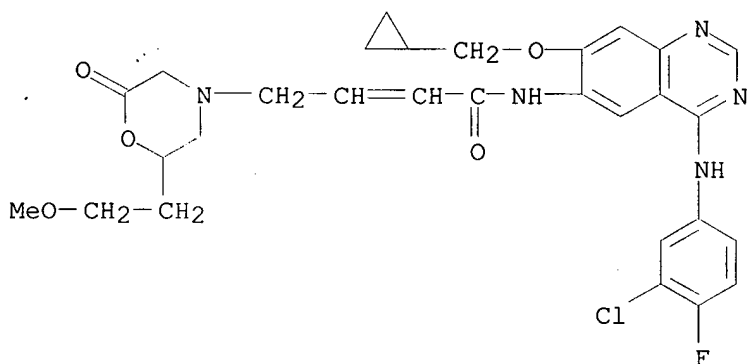


RN 402570-00-7 CAPLUS  
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Absolute stereochemistry.  
 Double bond geometry unknown.



RN 402570-01-8 CAPLUS  
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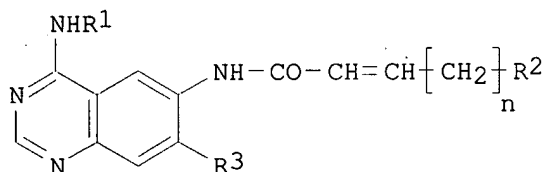
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134 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2002:171889 CAPLUS  
DOCUMENT NUMBER: 136:232315  
TITLE: Preparation of 4-amino-6-vinylcarbonylaminoquinazoline  
s as epidermal growth factor receptor signal  
transduction inhibitors  
INVENTOR(S): Himmelsbach, Frank; Langkopf, Elke; Jung, Birgit;  
Blech, Stefan; Solca, Flavio  
PATENT ASSIGNEE(S): Boehringer Ingelheim Pharma Kg, Germany  
SOURCE: PCT Int. Appl., 78 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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WO 2002018373 A1 20020307 WO 2001-EP9537 20010818  
 W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
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 GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
 LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL,  
 PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG,  
 US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 DE 10042060 A1 20020307 DE 2000-10042060 20000826  
 US 2002077330 A1 20020620 US 2001-929931 20010815  
 AU 2001084021 A5 20020313 AU 2001-84021 20010818  
 PRIORITY APPLN. INFO.: DE 2000-10042060 A 20000826  
 US 2000-230389P P 20000906  
 WO 2001-EP9537 W 20010818

OTHER SOURCE(S): MARPAT 136:232315  
 GI



AB Title compds. [I; R1 = PhCH2, 1-phenylethyl, (substituted) Ph; R2 = N-[(1,3-dioxolan-2-yl)methyl]methylamino, (substituted) R4OCOCH2NCH2CH2OH, 2-oxomorpholin-4-yl; R4 = H, alkyl; R3 = H, (alkoxy)alkoxy, cycloalkylalkoxy, tetrahydrofuran-3-yloxy, tetrahydropyran-3-yloxy, tetrahydropyran-4-yloxy, tetrahydrofuran-ylmethoxy, tetrahydropyran-ylmethoxy; n = 1-3], were prep'd. Thus, a mixt. of 6-amino-4-[(3-chloro-4-fluorophenyl)amino]-7-cyclopropylmethoxyquinazoline (prepn. given) and diisopropylethylamine in THF was dropwise treated under ice-cooling with BrCH2CH:CHCO2Cl (prepn. given) in CH2Cl2 followed by stirring for 1 h under ice-cooling and for 2 h at room temp. and addn. of (S)-(2-hydroxypropylamino)acetic acid tert-Bu ester in CH2Cl2 to give after stirring over night at room temp. and stirring for 5 h at 60.degree. 64% 4-[(3-chloro-4-fluorophenyl)amino]-6-[(4-[N-(tert-butyloxycarbonylmethyl)-N-((S)-2-hydroxyprop-1-yl)amino]-1-oxo-2-buten-1-yl)amino]-7-cyclopropylmethoxyquinazoline. Several I inhibited epidermal growth factor (EGF)-dependent proliferation of F/L-HERc cells with IC50 = 0.02-15 nM. The invention relates to the use of the title compds. for treating tumor diseases, and lung and respiratory tract disorders.

IT 402855-53-2P

RL: PAC (Pharmacological activity); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)

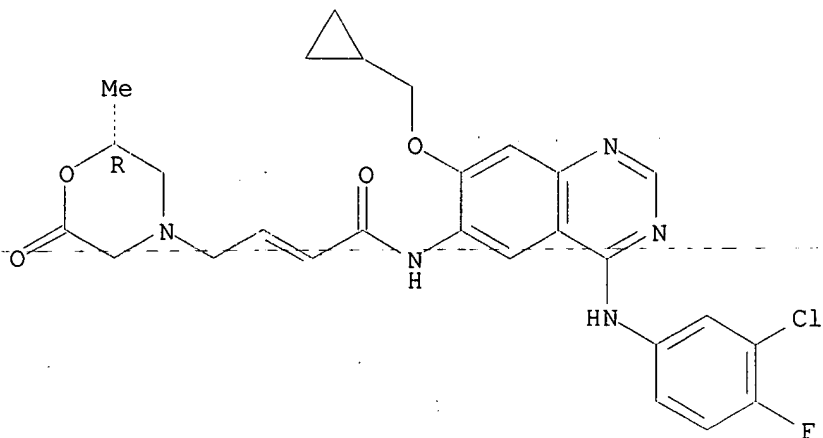
(prepn. of (amino)(vinylcarbonylamino)quinazolines as epidermal growth factor receptor signal transduction inhibitors)

RN 402855-53-2 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.



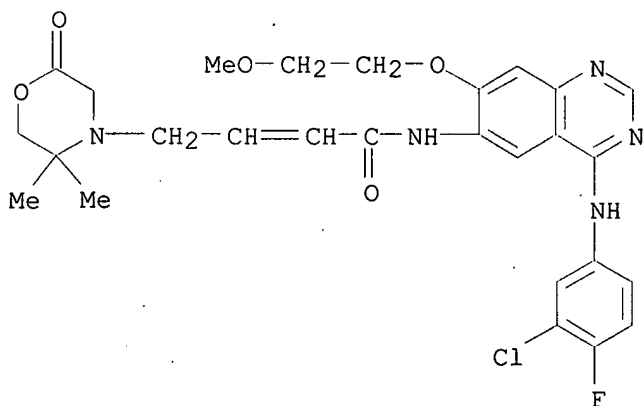
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 402855-69-0P 402855-70-3P 402855-71-4P  
 402855-72-5P 402855-73-6P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of (amino)(vinylcarbonylamino)quinazolines as epidermal growth factor receptor signal transduction inhibitors)

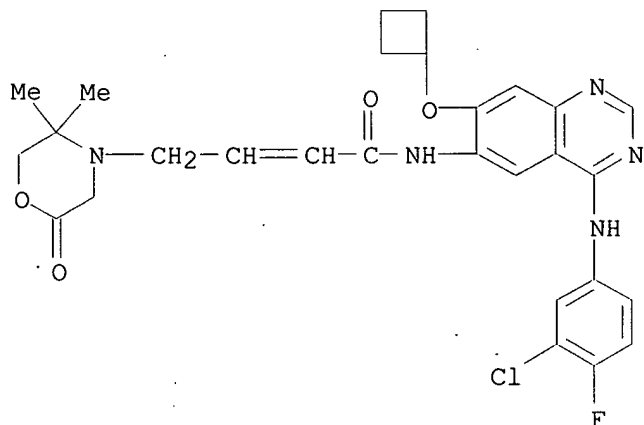
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CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(2-methoxyethoxy)-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



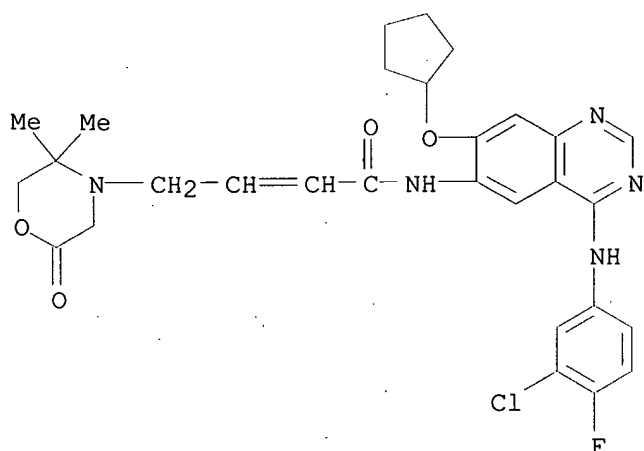
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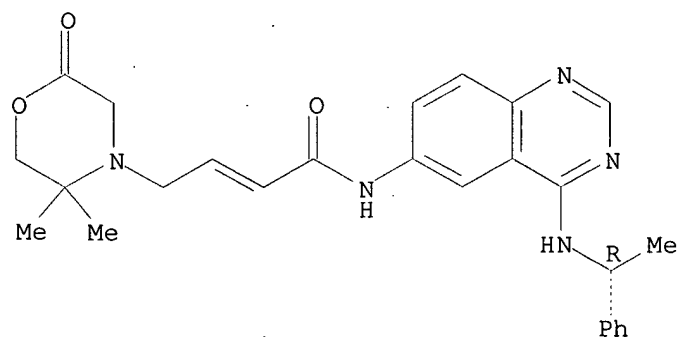
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopentyloxy)-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-24-7 CAPLUS

CN 2-Butenamide, 4-(5,5-dimethyl-2-oxo-4-morpholinyl)-N-[4-[(1R)-1-phenylethyl]amino]-6-quinazolinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

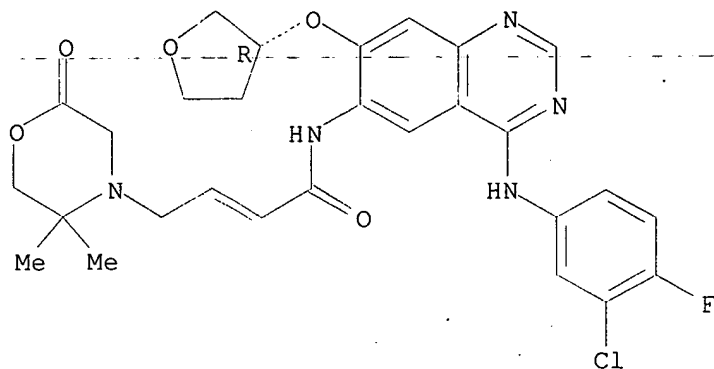


RN 402855-25-8 CAPLUS

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(CA INDEX NAME)

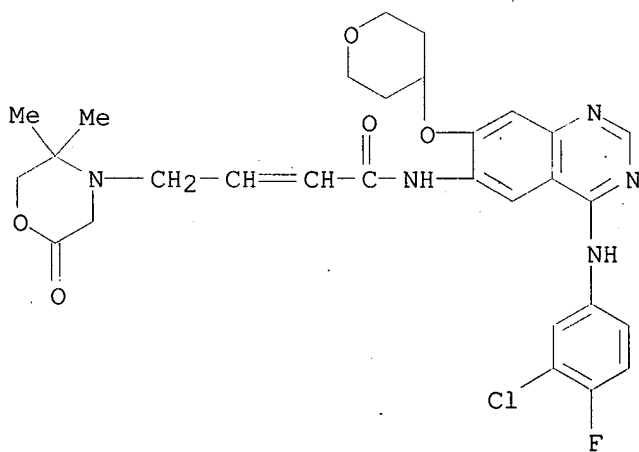
Absolute stereochemistry.

Double bond geometry unknown.



RN 402855-29-2 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)oxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



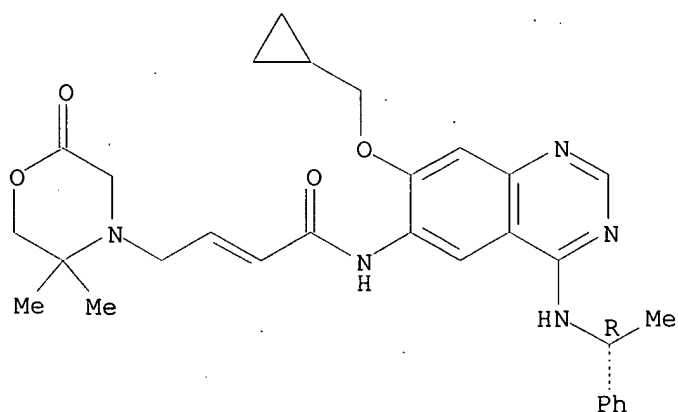
RN 402855-30-5 CAPLUS

CN 2-Butenamide, N-[7-(cyclopropylmethoxy)-4-[[ (1R)-1-phenylethyl]amino]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

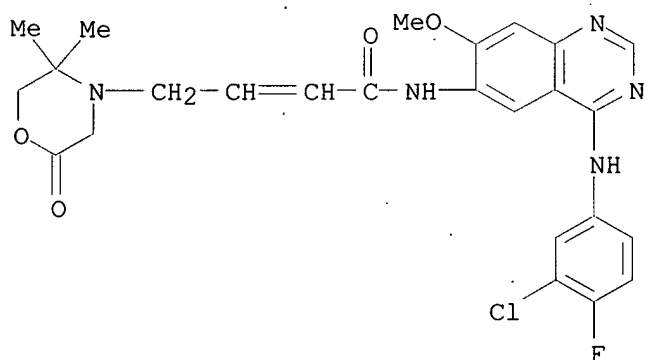
Double bond geometry unknown.





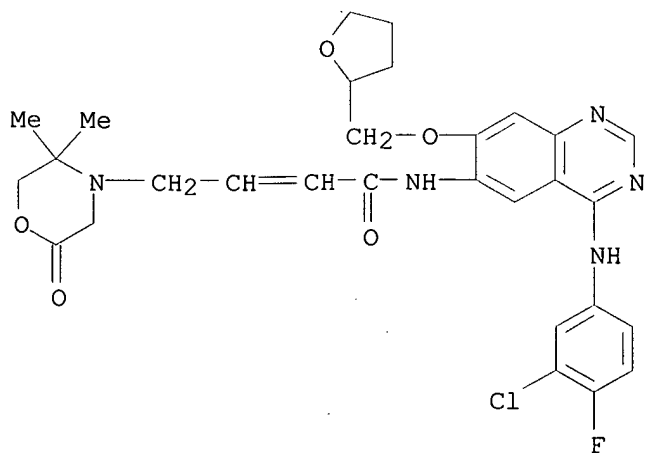
RN 402855-32-7 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-methoxy-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-33-8 CAPLUS

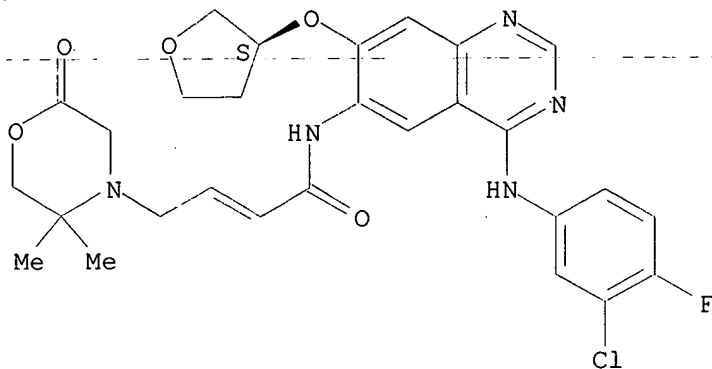
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2-furanyl)methoxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-34-9 CAPLUS

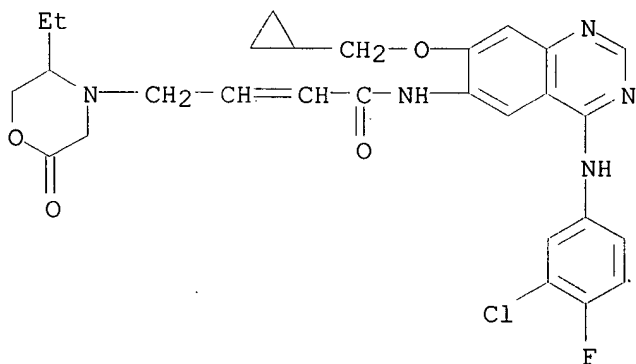
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3S)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



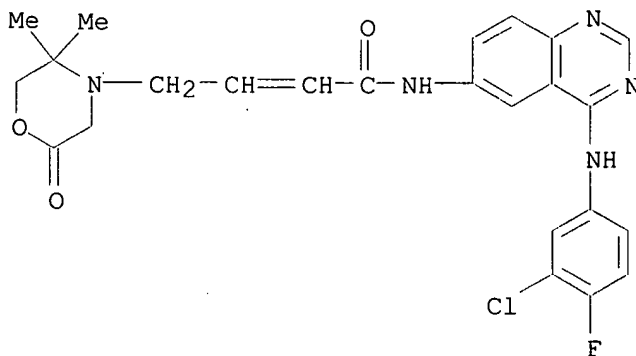
RN 402855-35-0 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(5-ethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



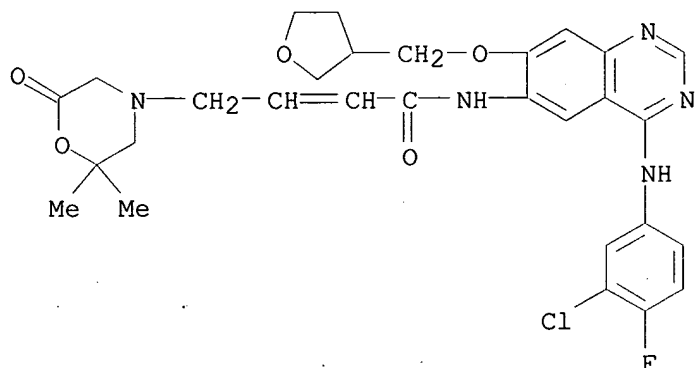
RN 402855-38-3 CAPLUS

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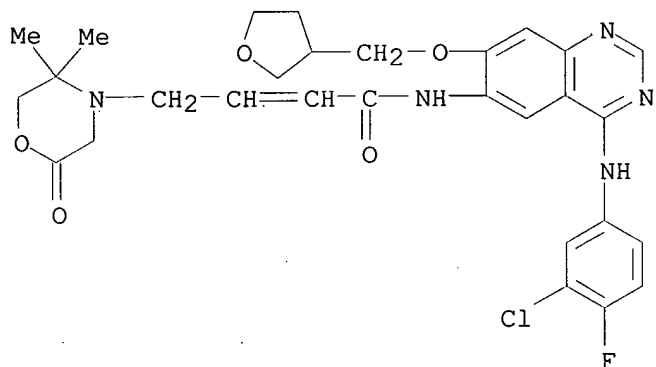
RN 402855-47-4 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-3-furanyl)methoxy]-6-quinazolinyl]-4-(2,2-dimethyl-6-oxo-4-morpholinyl)-(9CI) (CA INDEX NAME)



RN 402855-48-5 CAPLUS

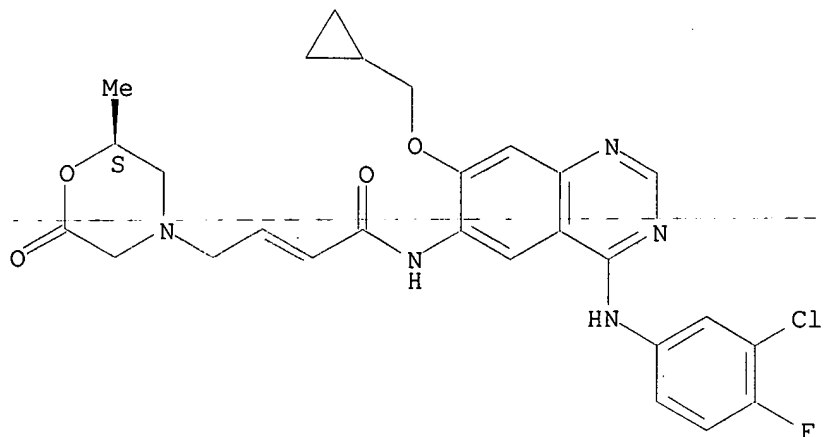
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-3-furanyl)methoxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)-(9CI) (CA INDEX NAME)



RN 402855-52-1 CAPLUS

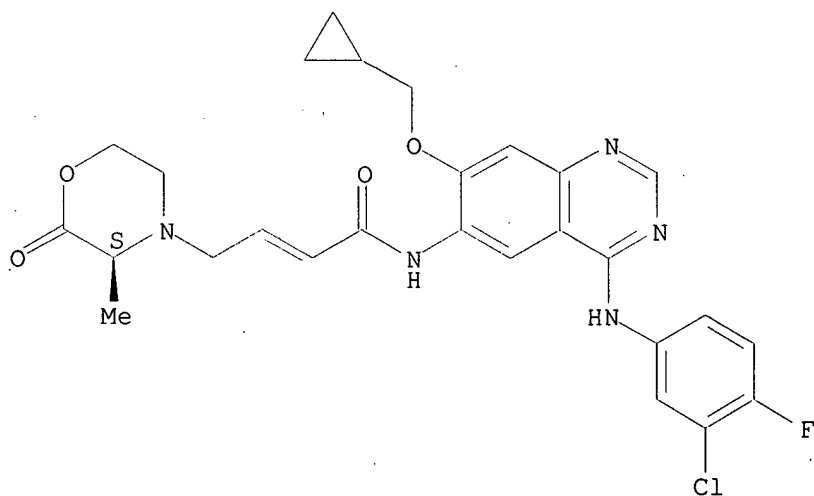
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]-(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



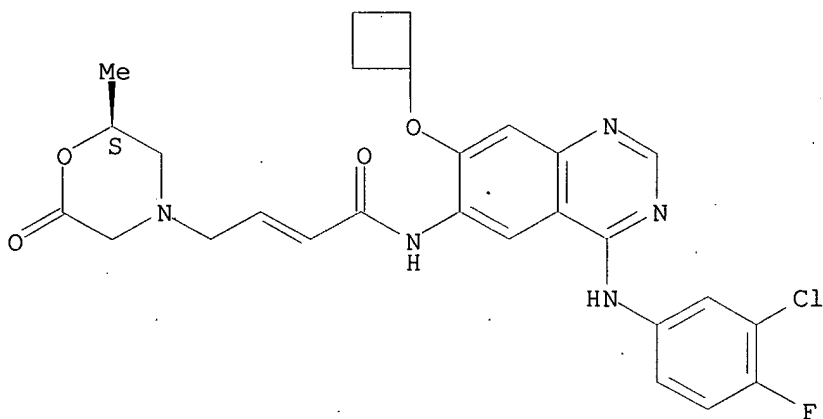
RN 402855-54-3 CAPLUS  
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(3S)-3-methyl-2-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-55-4 CAPLUS  
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclobutylmethoxy)-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

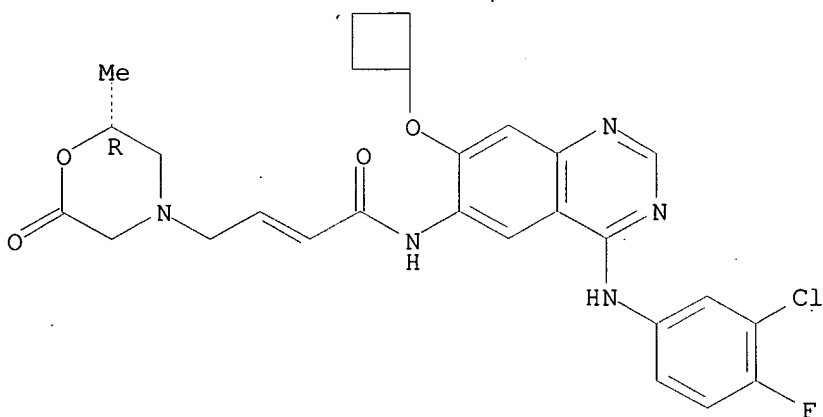


RN 402855-56-5 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclobutyloxy)-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

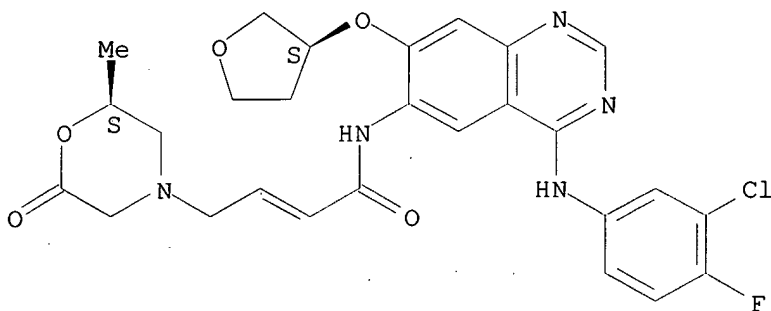


RN 402855-57-6 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(3S)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

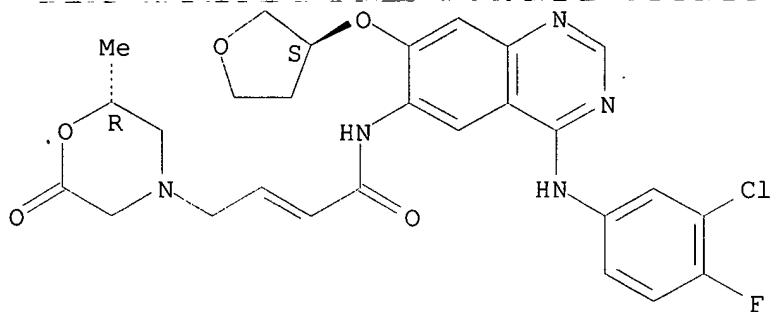
Absolute stereochemistry.

Double bond geometry unknown.



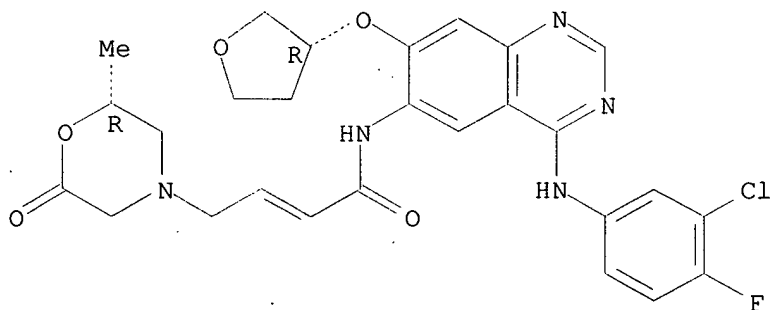
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CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3S)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

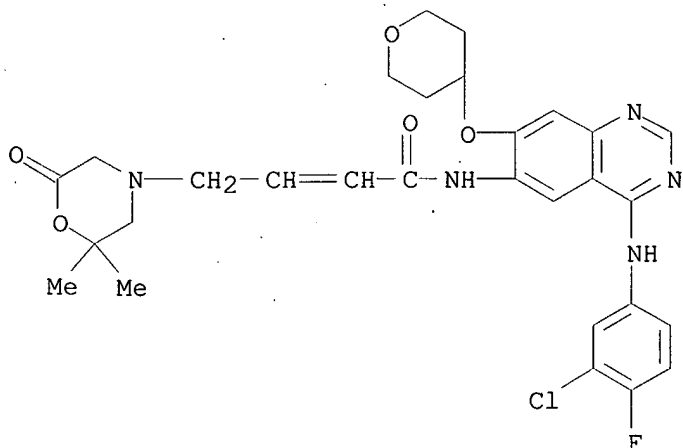


RN 402855-59-8 CAPLUS  
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3R)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-60-1 CAPLUS  
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)oxy]-6-quinazolinyl]-4-(2,2-dimethyl-6-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)

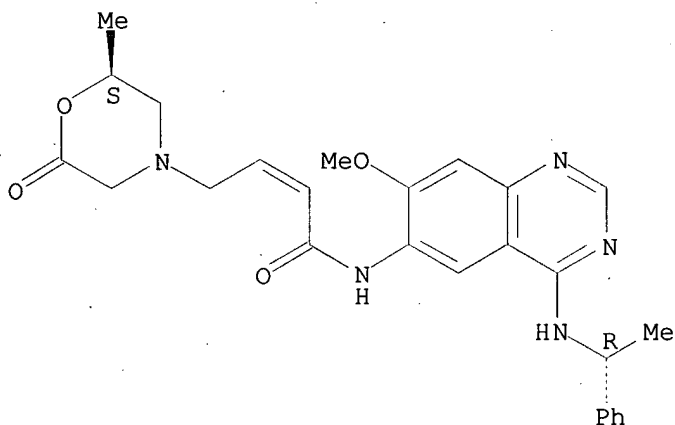


RN 402855-61-2 CAPLUS

CN 2-Butenamide, N-[7-methoxy-4-[[[(1R)-1-phenylethyl]amino]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

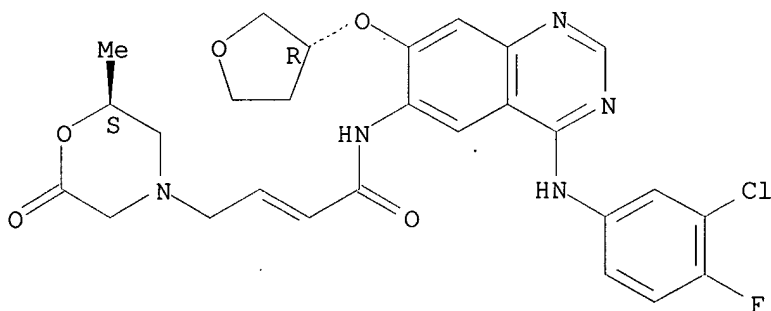


RN 402855-62-3 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[[(3R)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

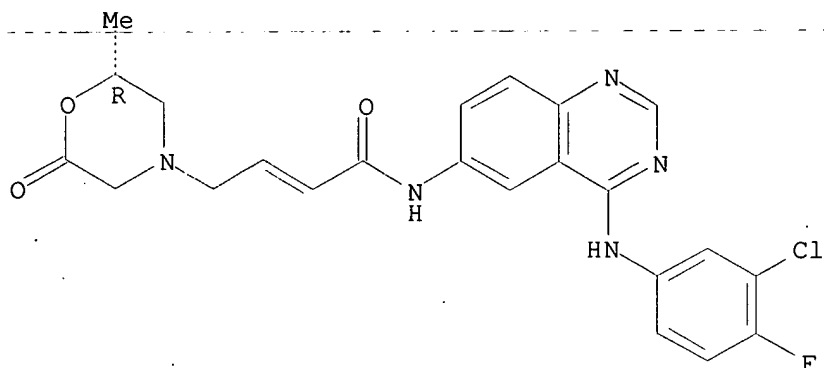


RN 402855-63-4 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

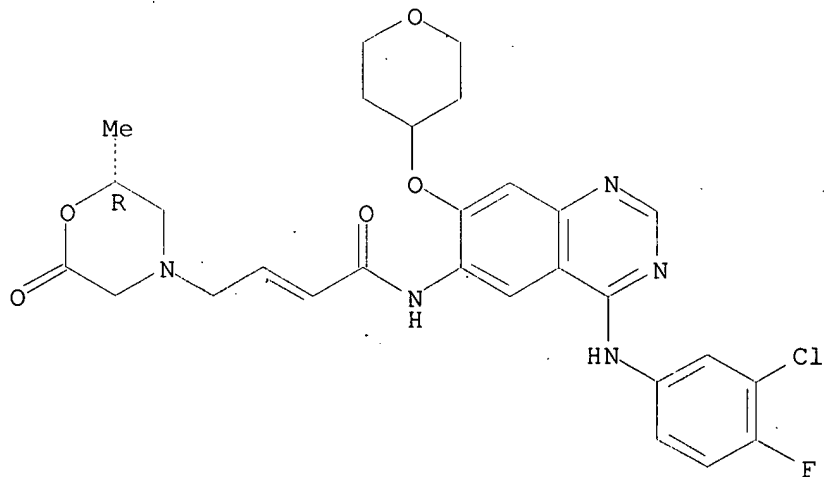


RN 402855-64-5 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)oxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.



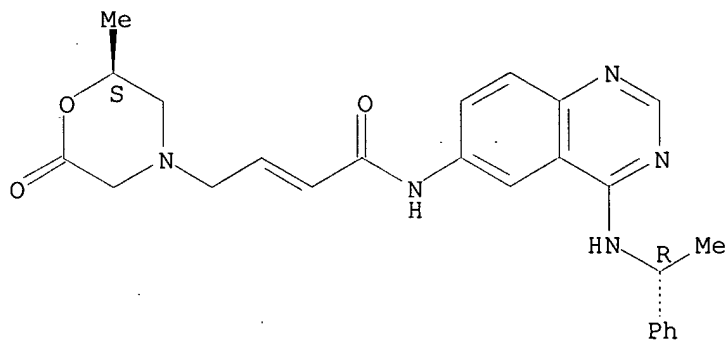
RN 402855-65-6 CAPLUS

CN 2-Butenamide, 4-[(2S)-2-methyl-6-oxo-4-morpholinyl]-N-[4-[(1R)-1-phenylethyl]amino]-6-quinazolinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

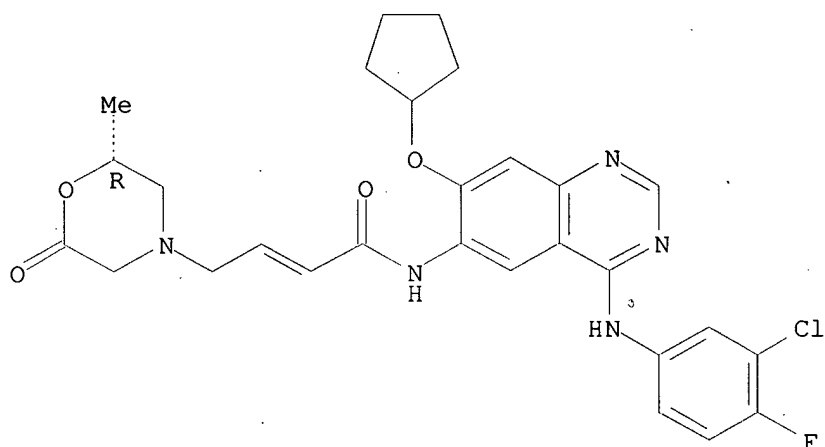




RN 402855-66-7 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopentyloxy)-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

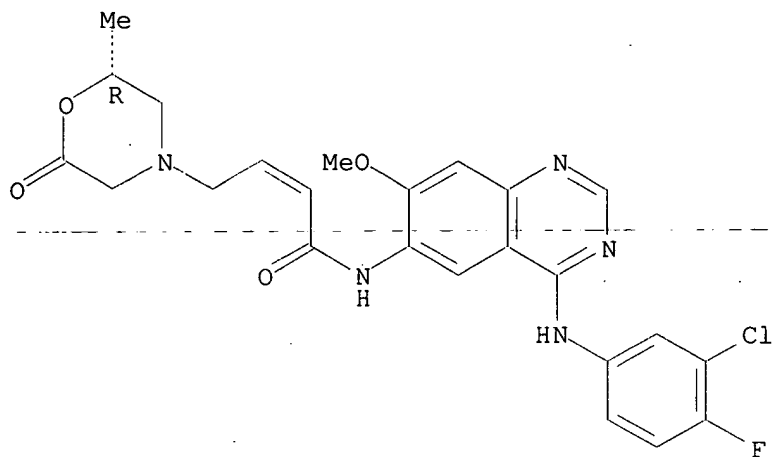
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-67-8 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-methoxy-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

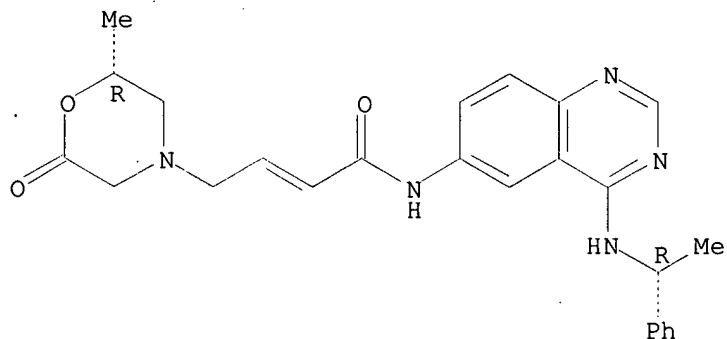


RN 402855-68-9 CAPLUS

CN 2-Butenamide, 4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-N-[4-[[[(1R)-1-phenylethyl]amino]-6-quinazolinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

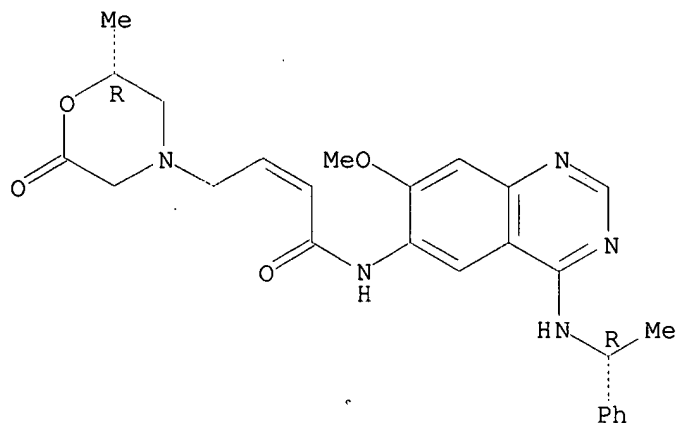


RN 402855-69-0 CAPLUS

CN 2-Butenamide, N-[7-methoxy-4-[[[(1R)-1-phenylethyl]amino]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

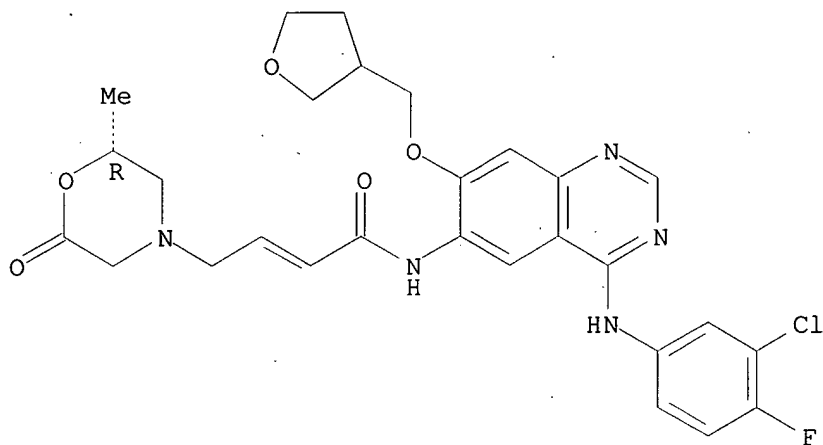
Absolute stereochemistry.

Double bond geometry unknown.



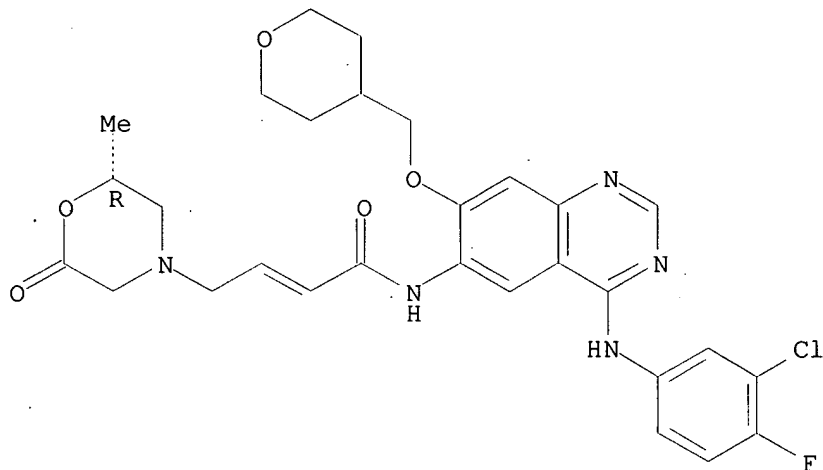
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CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-3-furanyl)methoxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



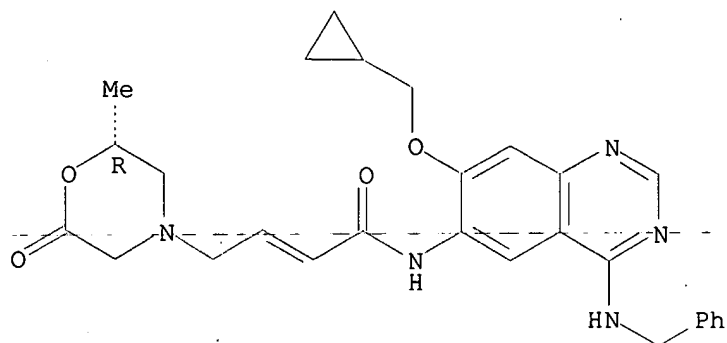
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CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)methoxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



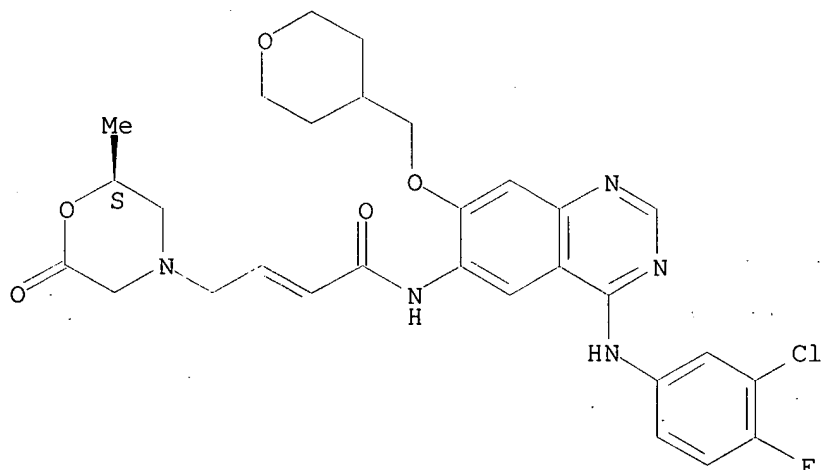
RN 402855-72-5 CAPLUS  
CN 2-Butenamide, N-[7-(cyclopropylmethoxy)-4-[(phenylmethyl)amino]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-73-6 CAPLUS  
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)methoxy]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2000:628125 CAPLUS

DOCUMENT NUMBER: 133:207919

TITLE: Preparation of 4-amino-quinazoline and quinoline derivatives having an inhibitory effect on signal transduction mediated by tyrosine kinases useful for treating tumoral diseases, lung and respiratory tract diseases

INVENTOR(S): Himmelsbach, Frank; Langkopf, Elke; Jung, Birgit; Metz, Thomas; Solca, Flavio; Blech, Stefan

PATENT ASSIGNEE(S): Boehringer Ingelheim Pharma K.-G., Germany

SOURCE: PCT Int. Appl., 232 pp.

CODEN: PIXXD2

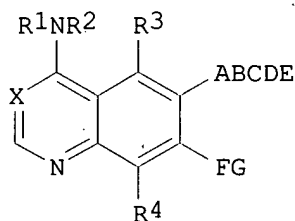
DOCUMENT TYPE: Patent

LANGUAGE: English

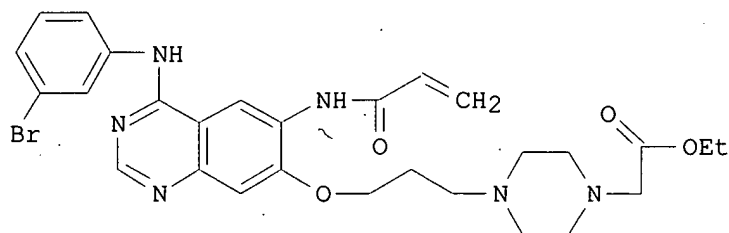
FAMILY ACC. NUM. COUNT: 2

PATENT INFORMATION:

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W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
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DE 19911366	A1	20000921	DE 1999-19911366	19990315
DE 19928306	A1	20001228	DE 1999-19928306	19990621
DE 19954816	A1	20010517	DE 1999-19954816	19991113
CA 2361174	AA	20000908	CA 2000-2361174	20000224
EP 1157011	A1	20011128	EP 2000-910695	20000224
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BR 2000008524	A	20011218	BR 2000-8524	20000224
JP 2002538145	T2	20021112	JP 2000-602218	20000224
EE 200100449	A	20021216	EE 2001-449	20000224
BG 105765	A	20020329	BG 2001-105765	20010801
NO 2001004114	A	20011015	NO 2001-4114	20010824
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DE 1999-19908567 A 19990227				
DE 1999-19911366 A 19990315				
DE 1999-19928306 A 19990621				
US 1999-149329P P 19990817				
DE 1999-19954816 A 19991113				
WO 2000-EP1496 W 20000224				
OTHER SOURCE(S):				
GI				
MARPAT 133:207919				



I



II

AB Title compds. [I; R1 = H, C1-C4-alkyl; R2 = (un)substituted Ph, benzyl, 1-phenylethyl; R3, R4 independently = H, F, Cl, CH3O, CH3OCH2, (CH3)2NCH2, (CH3CH2)2NCH2, pyrrolidino, piperidino, morpholino; X = C(CN), N; A = O, NH, (C1-C4)-alkylN; B = CO, SO2; C = 1,3-allenylene, 1,1-vinylene, 1,2-vinylene, 1,3-butadien-1,4-ylene, with CH3, CF3 substitution; D = alkylene, CO-alkylene, SO2-alkylene; CO, SO2; E = HOCO(CH2)nNR5, (HO)2P(:O)(CH2)nNR5; n = 1-6; R5 = H, alkyl], tautomers, stereoisomers, and physiol. acceptable salts are prepd. and having valuable pharmacol. properties, particularly an inhibiting effect on signal transduction mediated by tyrosine kinases. Title compds. are useful for treating tumoral diseases, diseases of the lungs and respiratory tract. Thus, the title compd. II was prepd. and tested by Cell Titer 96TM Aq. Nonradioactive Cell Proliferation Assay.

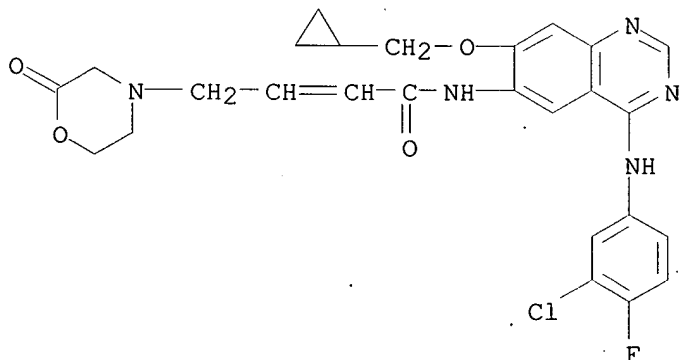
IT 290302-25-9P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of aminoquinazoline and aminoquinoline derivs. having an inhibitory effect on signal transduction mediated by tyrosine kinases useful for treating tumoral diseases, lung and respiratory tract diseases)

RN 290302-25-9 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



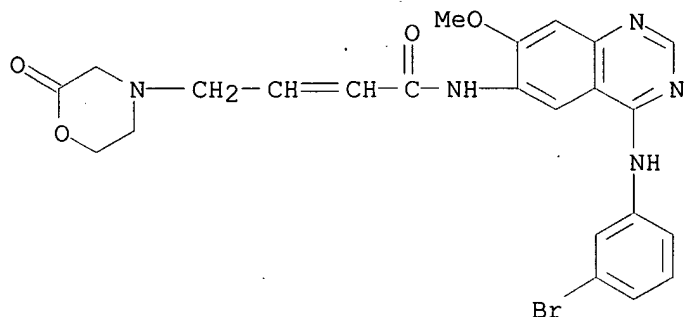
IT 290301-98-3P 290302-51-1P 290302-53-3P  
290303-02-5P 290303-03-6P

RL: SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of aminoquinazoline and aminoquinoline derivs. having an inhibitory effect on signal transduction mediated by tyrosine kinases useful for treating tumoral diseases, lung and respiratory tract diseases)

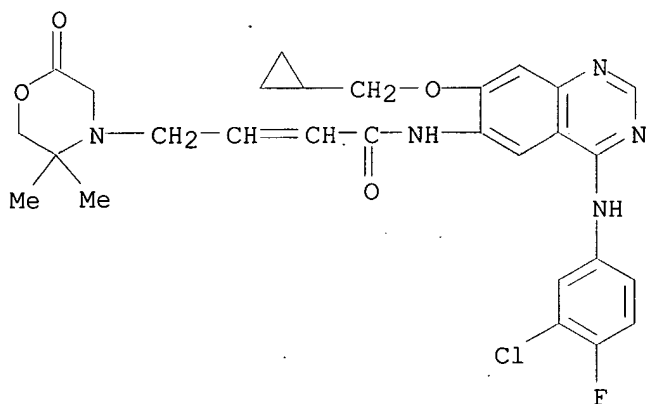
RN 290301-98-3 CAPLUS

CN 2-Butenamide, N-[4-[(3-bromophenyl)amino]-7-methoxy-6-quinazolinyl]-4-(2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



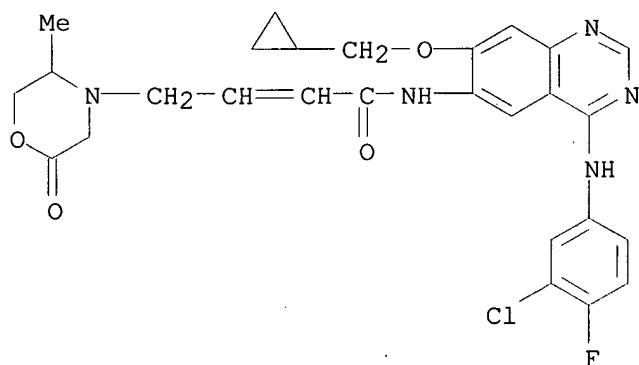
RN 290302-51-1 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME).



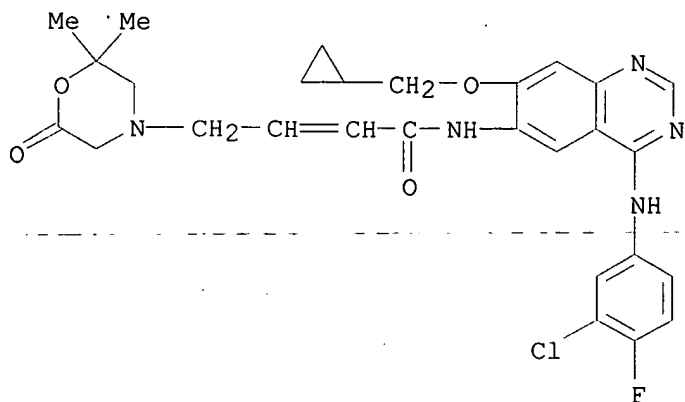
RN 290302-53-3 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(5-methyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



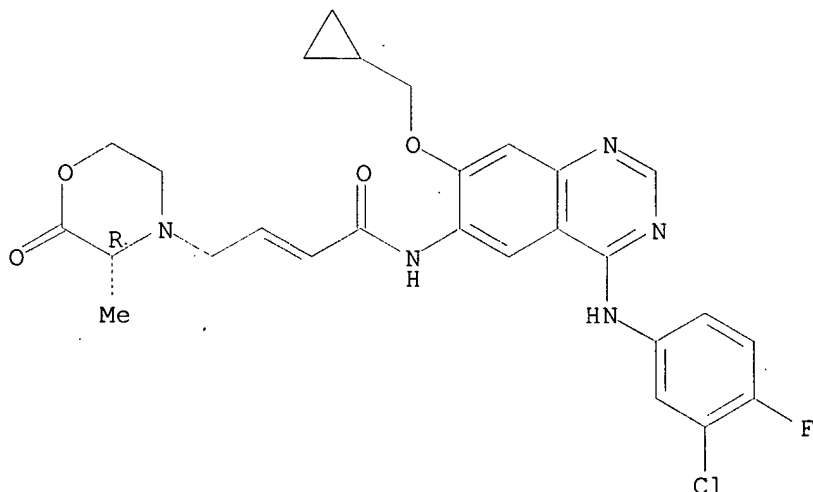
RN 290303-02-5 CAPLUS

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(2,2-dimethyl-6-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 290303-03-6 CAPLUS  
 CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazoliny]-4-[(3R)-3-methyl-2-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
 Double bond geometry unknown.



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L34 ANSWER 4 OF 5 USPATFULL

ACCESSION NUMBER: 2002:214287 USPATFULL

TITLE: Aminoquinazolines which inhibit signal transduction mediated by tyrosine kinases

INVENTOR(S): Himmelsbach, Frank, Mittelbiberach, GERMANY, FEDERAL REPUBLIC OF  
 Langkopf, Elke, Warthausen, GERMANY, FEDERAL REPUBLIC OF  
 Jung, Birgit, Schwabenheim, GERMANY, FEDERAL REPUBLIC OF  
 Blech, Stefan, Warthausen, GERMANY, FEDERAL REPUBLIC OF  
 Solca, Flavio, Wien, AUSTRIA

NUMBER	KIND	DATE
-----		

Searched by Barb O'Bryen, STIC 308-4291



PATENT INFORMATION: US 2002115675 A1 20020822  
APPLICATION INFO.: US 2001-934631 A1 20010822 (9)  
NUMBER *the application* DATE

PRIORITY INFORMATION: DE 2000-DE10042062 20000826  
US 2000-230542P 20000905 (60)  
DOCUMENT TYPE: Utility  
FILE SEGMENT: APPLICATION  
LEGAL REPRESENTATIVE: BOEHRINGER INGELHEIM CORPORATION, 900 RIDGEBURY ROAD,  
P. O. BOX 368, RIDGEFIELD, CT, 06877  
NUMBER OF CLAIMS: 8  
EXEMPLARY CLAIM: 1  
LINE COUNT: 1172  
CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
AB Compounds of the formula ##STR1##

having an inhibitory effect on signal transduction mediated by tyrosine kinases, and the use thereof for treating diseases, particularly tumoral diseases, diseases of the lungs and respiratory tract.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
IT 402569-98-6P 402569-99-7P 402570-00-7P

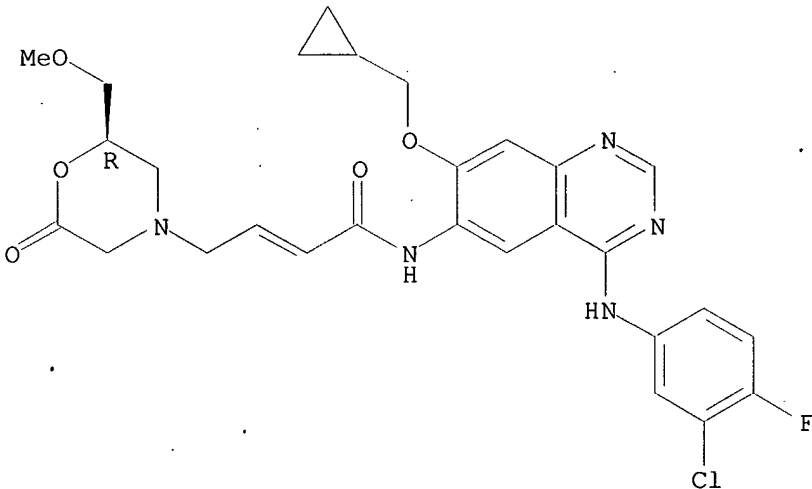
402570-01-8P

(prepn. of (amino)(heterocyclylcarbonylamino)quinazolines as epidermal growth factor receptor signal transduction inhibitors)

RN 402569-98-6 USPATFULL

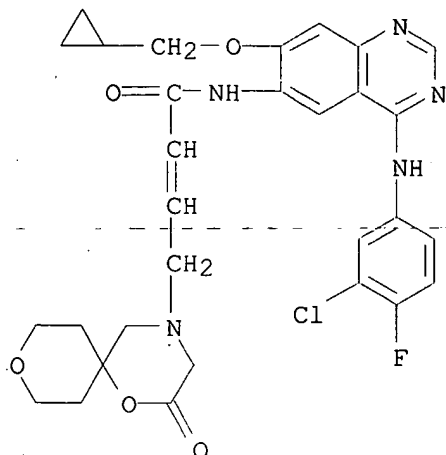
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(2R)-2-(methoxymethyl)-6-oxo-4-morpholinyl]- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402569-99-7 USPATFULL

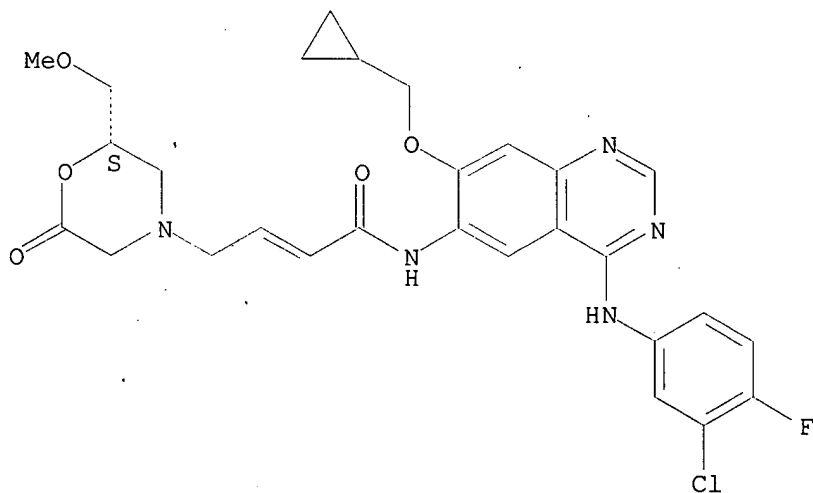
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(2-oxo-1,9-dioxo-4-azaspiro[5.5]undec-4-yl)- (9CI)  
(CA INDEX NAME)



RN 402570-00-7 USPATFULL

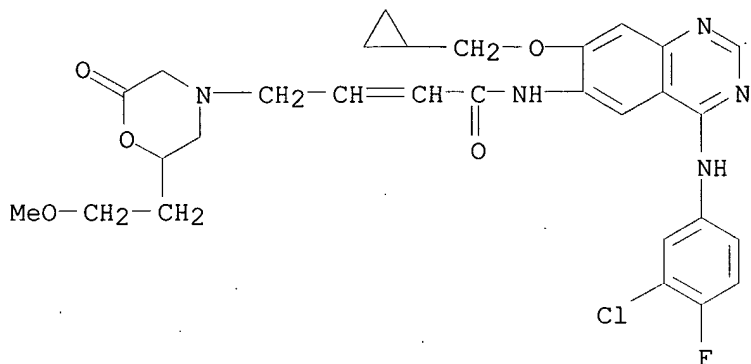
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(2S)-2-(methoxymethyl)-6-oxo-4-morpholinyl]- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402570-01-8 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[2-(2-methoxyethyl)-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)



L34 ANSWER 5 OF 5 USPATFULL

ACCESSION NUMBER:

2002:149174 USPATFULL

TITLE:

Bicyclic heterocycles, pharmaceutical compositions containing them, their use, and processes for preparing them

INVENTOR(S):

Himmelsbach, Frank, Mittelbiberach, GERMANY, FEDERAL  
REPUBLIC OF  
Langkopf, Elke, Warthausen, GERMANY, FEDERAL REPUBLIC  
OF  
Jung, Birgit, Schwabenheim, GERMANY, FEDERAL REPUBLIC  
OF  
Blech, Stefan, Warthausen, GERMANY, FEDERAL REPUBLIC OF  
Solca, Flavio, Wien, AUSTRIA

PATENT INFORMATION:

US 2002077330 A1 20020620

APPLICATION INFO.:

US ~~2001-929931~~ A1 20010815 (9)

PRIORITY INFORMATION:

NUMBER	DATE
DE 2000-10042060	20000826
US 2000-230389P	20000906 (60)

DOCUMENT TYPE:

Utility

FILE SEGMENT:

APPLICATION

LEGAL REPRESENTATIVE:

BOEHRINGER INGELHEIM CORPORATION, 900 RIDGEBURY ROAD,  
P. O. BOX 368, RIDGEFIELD, CT, 06877

NUMBER OF CLAIMS:

9

EXEMPLARY CLAIM:

1

LINE COUNT:

1732

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A compound of formula (I) ##STR1##

wherein:

R.sub.a is a benzyl or 1-phenylethyl group or a phenyl group substituted by the groups R.sub.1 and R.sub.2, wherein:

R.sub.1 is a hydrogen, fluorine, chlorine, or bromine atom, or a methyl, trifluoromethyl, cyano, or ethynyl group, and

R.sub.2 is a hydrogen or fluorine atom;

R.sub.b is an R.sub.3O--CO--CH.sub.2--N--CH.sub.2--CH.sub.2--OH group optionally substituted at the methylene groups by 1 or 2 methyl or ethyl groups, wherein R.sub.3 is a hydrogen atom or a C.sub.1-4-alkyl group, a

2-oxomorpholin-4-yl group optionally substituted by 1 or 2 methyl or ethyl groups, or a N-[(1,3-dioxolan-2-yl)methyl]methylamino group;

R.sub.c is a hydrogen atom, or a methoxy, ethoxy, 2-methoxyethoxy, 2-ethoxyethoxy, cyclobutylloxy, cyclopentylloxy, cyclohexylloxy, cyclopropylmethoxy, cyclobutylmethoxy, cyclopentylmethoxy, cyclohexylmethoxy, tetrahydrofuran-3-yloxy, tetrahydropyran-3-yloxy, tetrahydropyran-4-yloxy, tetrahydrofuran-ylmethoxy, or tetrahydropyran-ylmethoxy group; and

n is 1, 2, or 3, the tautomers, stereoisomers, and salts thereof, particularly the physiologically acceptable salts thereof with inorganic or organic acids or bases which have valuable pharmacological properties, their use in the treatment of diseases, especially tumoral diseases and diseases of the lungs and airways, and the preparation thereof.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 402855-53-2P

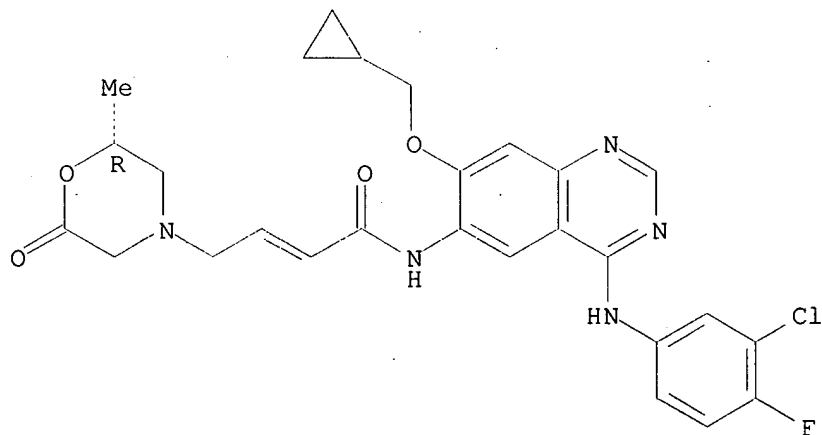
(prepn. of (amino)(vinylcarbonylamino)quinazolines as epidermal growth factor receptor signal transduction inhibitors)

RN 402855-53-2 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.



IT 402855-19-0P 402855-22-5P 402855-23-6P

402855-24-7P 402855-25-8P 402855-29-2P

402855-30-5P 402855-32-7P 402855-33-8P

402855-34-9P 402855-35-0P 402855-38-3P

402855-47-4P 402855-48-5P 402855-52-1P

402855-54-3P 402855-55-4P 402855-56-5P

402855-57-6P 402855-58-7P 402855-59-8P

402855-60-1P 402855-61-2P 402855-62-3P

402855-63-4P 402855-64-5P 402855-65-6P

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402855-69-0P 402855-70-3P 402855-71-4P

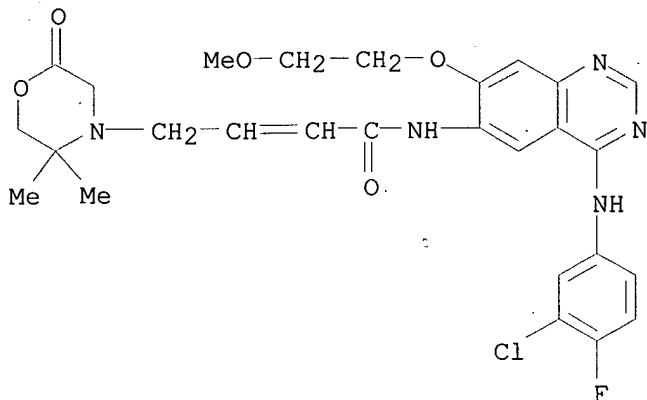
402855-72-5P 402855-73-6P

(prepn. of (amino)(vinylcarbonylamino)quinazolines as epidermal growth factor receptor signal transduction inhibitors)

RN 402855-19-0 USPATFULL

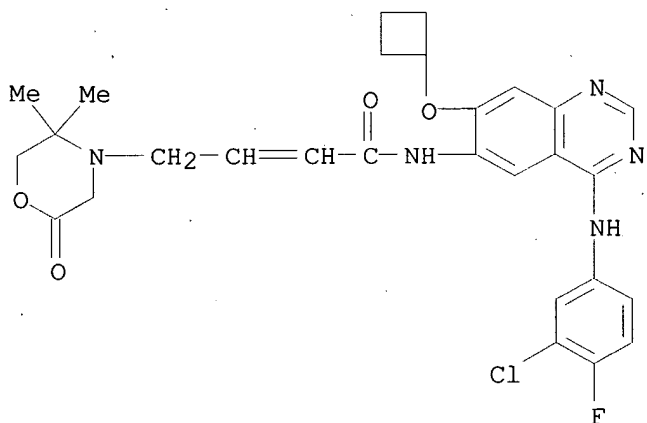
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(2-methoxyethoxy)-6-

quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



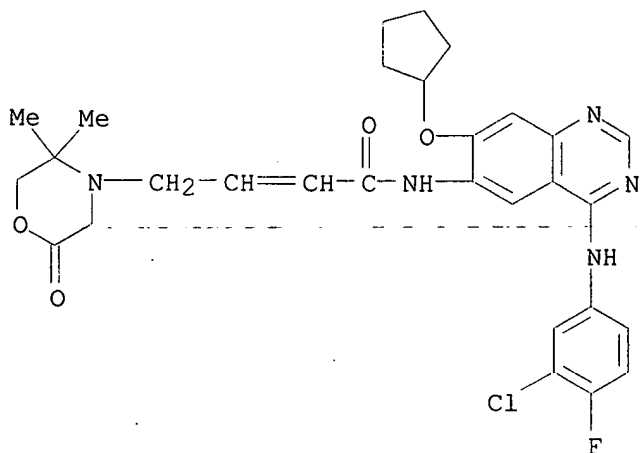
RN 402855-22-5 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclobutyloxy)-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-23-6 USPATFULL

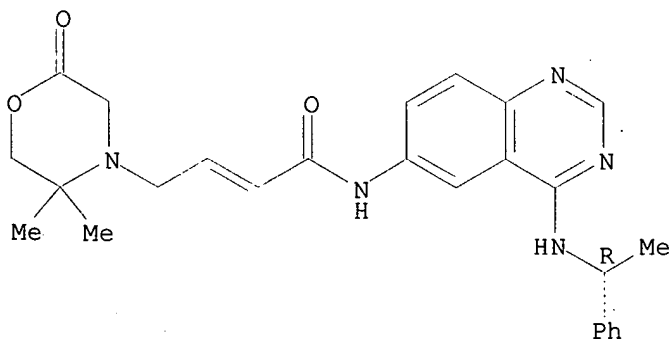
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopentyloxy)-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-24-7 USPATFULL

CN 2-Butenamide, 4-(5,5-dimethyl-2-oxo-4-morpholinyl)-N-[4-[(1R)-1-phenylethyl]amino]-6-quinazolinyl]- (9CI) (CA INDEX NAME)

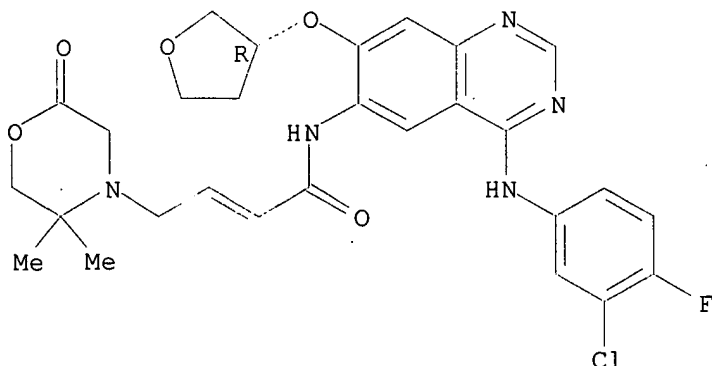
Absolute stereochemistry.  
Double bond geometry unknown.



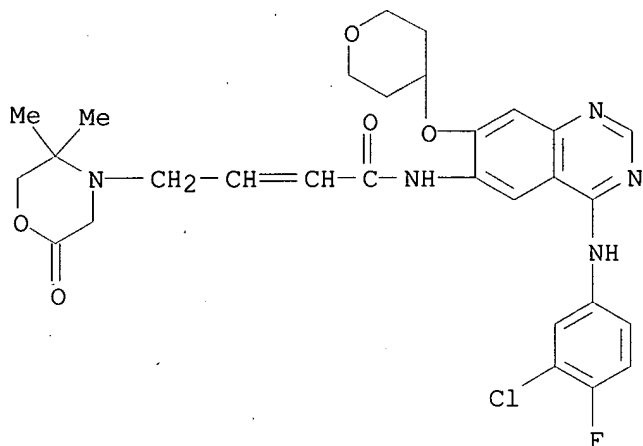
RN 402855-25-8 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3R)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

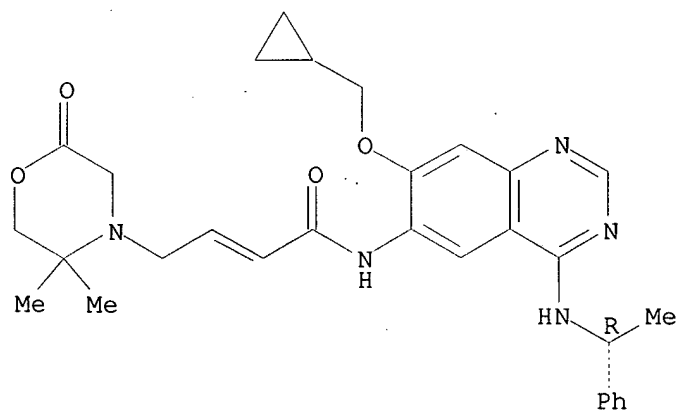


RN 402855-29-2 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)oxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)-  
(9CI) (CA INDEX NAME)

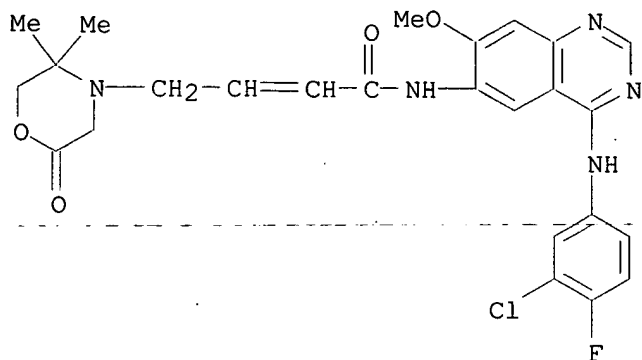
RN 402855-30-5 USPATFULL

CN 2-Butenamide, N-[7-(cyclopropylmethoxy)-4-[[[(1R)-1-phenylethyl]amino]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

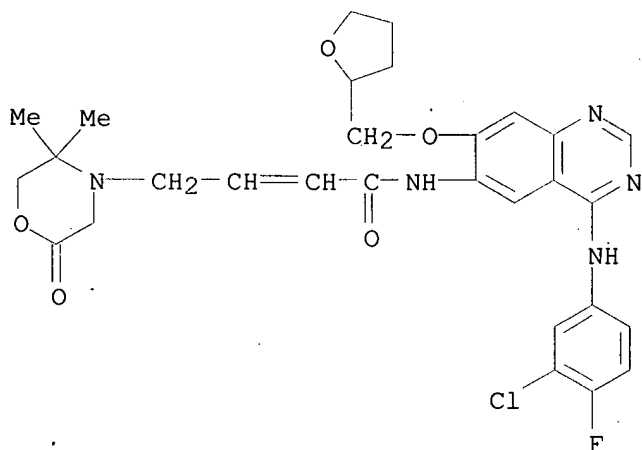
RN 402855-32-7 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-methoxy-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-33-8 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2-furanyl)methoxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)

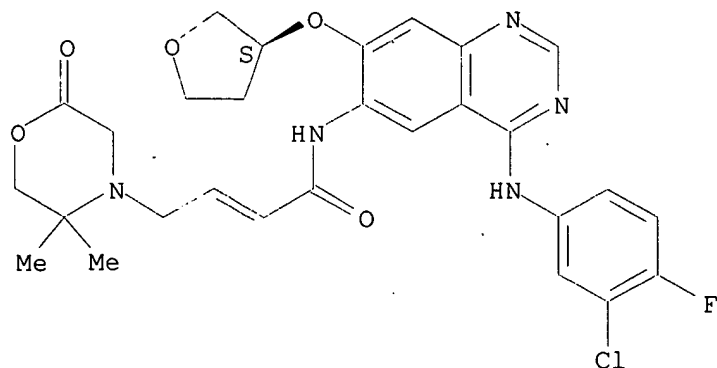


RN 402855-34-9 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3S)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

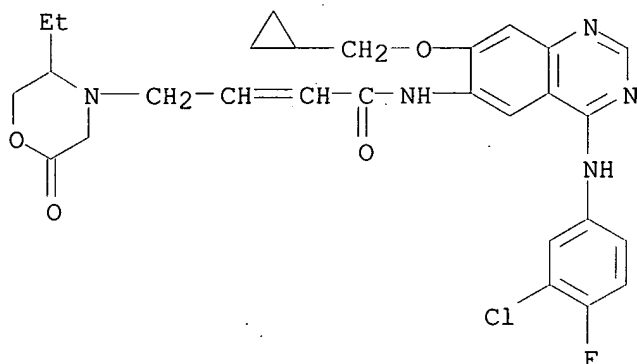
Double bond geometry unknown.





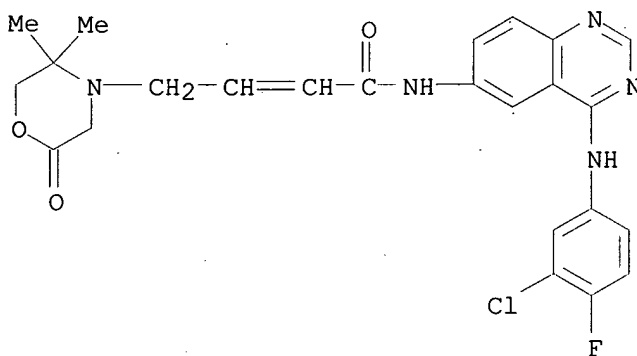
RN 402855-35-0 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-6-quinazolinyl]-4-(5-ethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



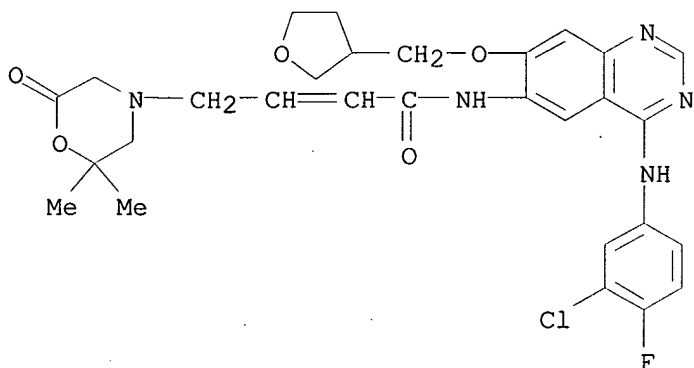
RN 402855-38-3 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-47-4 USPATFULL

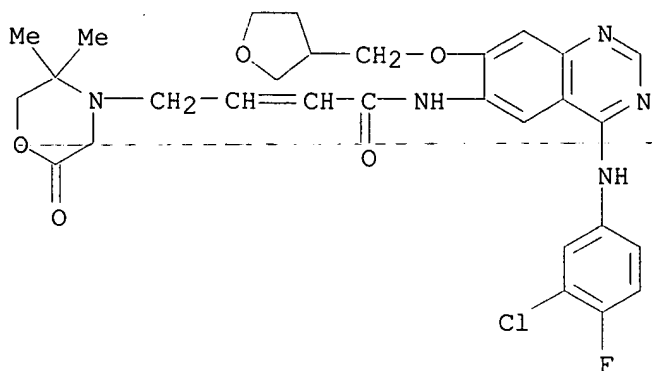
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-3-furanyl)methoxy]-6-quinazolinyl]-4-(2,2-dimethyl-6-oxo-4-morpholinyl)- (9CI) (CA INDEX NAME)



RN 402855-48-5 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-3-

furanyl)methoxy]-6-quinazolinyl]-4-(5,5-dimethyl-2-oxo-4-morpholinyl)-  
(9CI) (CA INDEX NAME)

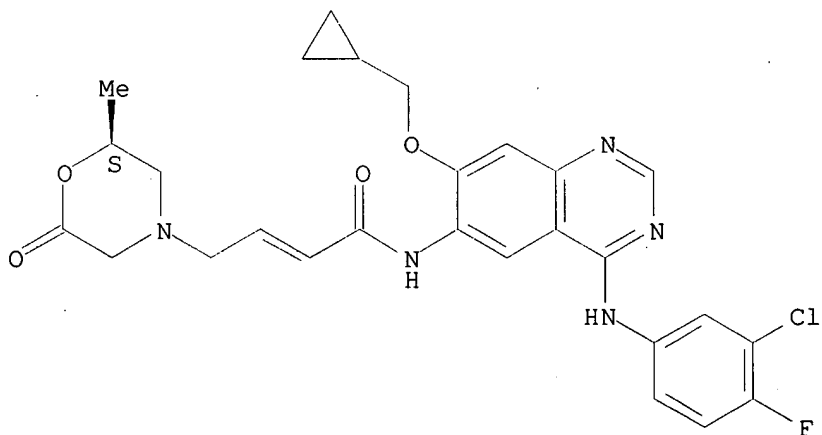


RN 402855-52-1 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-  
6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX  
NAME)

Absolute stereochemistry.

Double bond geometry unknown.

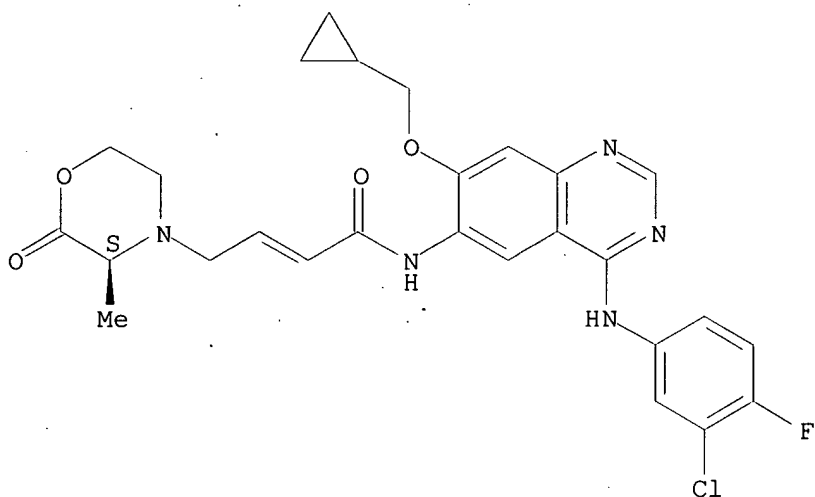


RN 402855-54-3 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopropylmethoxy)-  
6-quinazolinyl]-4-[(3S)-3-methyl-2-oxo-4-morpholinyl]- (9CI) (CA INDEX  
NAME)

Absolute stereochemistry.

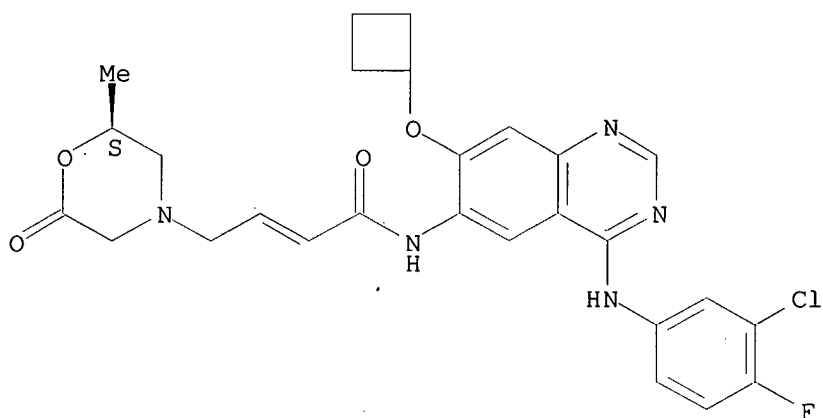
Double bond geometry unknown.



RN 402855-55-4 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclobutyloxy)-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

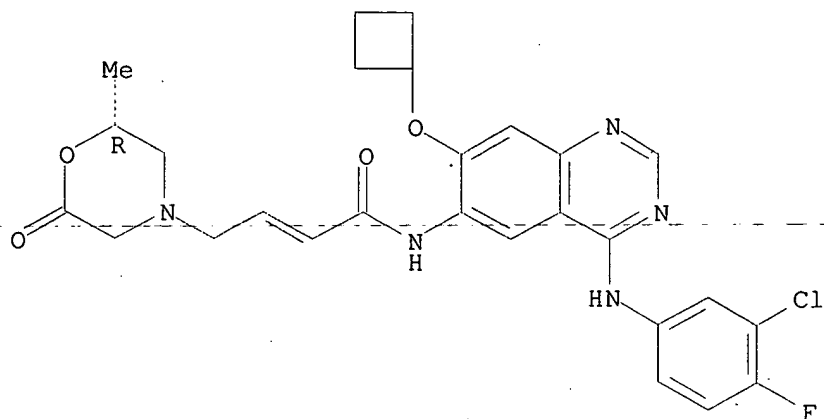
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-56-5 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclobutyloxy)-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

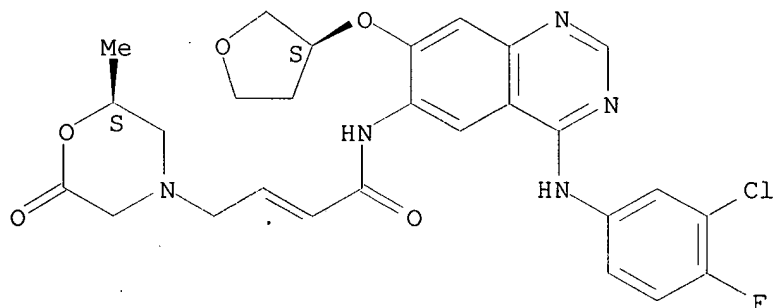
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-57-6 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3S)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]-  
(9CI) (CA INDEX NAME)

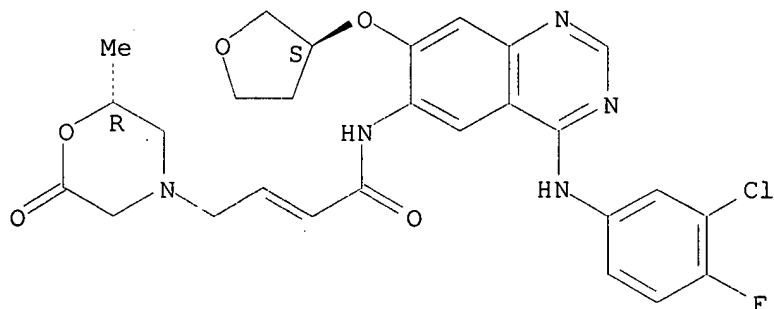
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-58-7 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3S)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

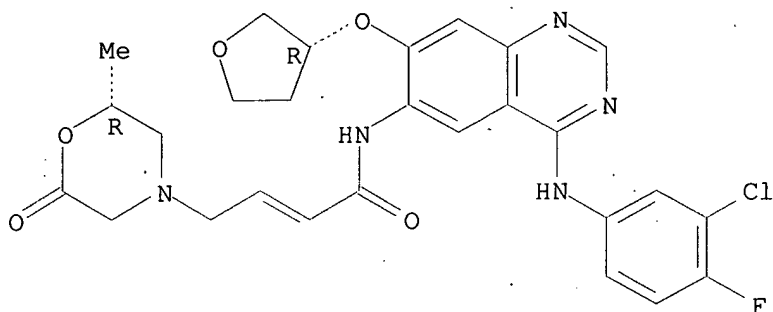


RN 402855-59-8 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3R)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-

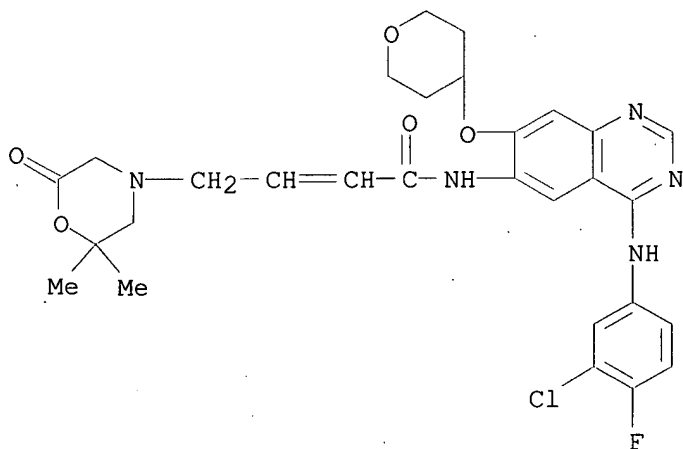
(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-60-1 USPATFULL

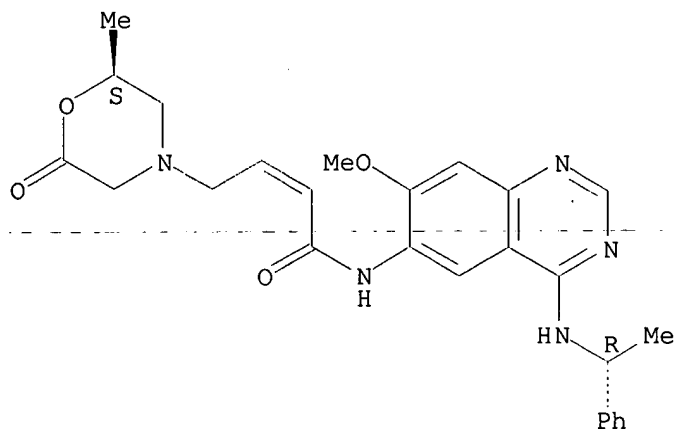
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)oxy]-6-quinazolinyl]-4-(2,2-dimethyl-6-oxo-4-morpholinyl)-  
(9CI) (CA INDEX NAME)



RN 402855-61-2 USPATFULL

CN 2-Butenamide, N-[7-methoxy-4-[(1R)-1-phenylethyl]amino]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

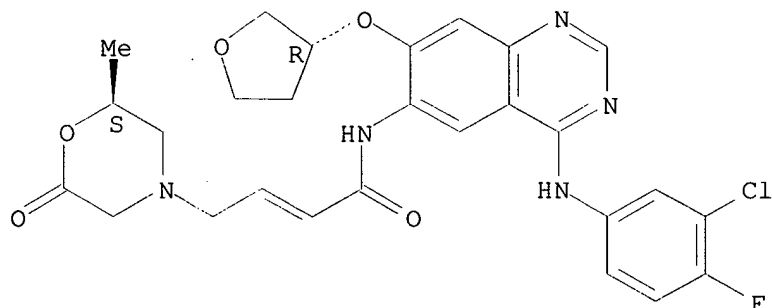
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-62-3 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[[ (3R)-tetrahydro-3-furanyl]oxy]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

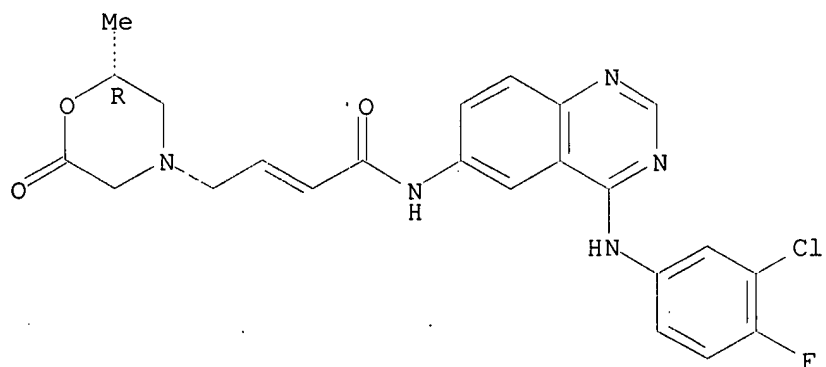
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-63-4 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

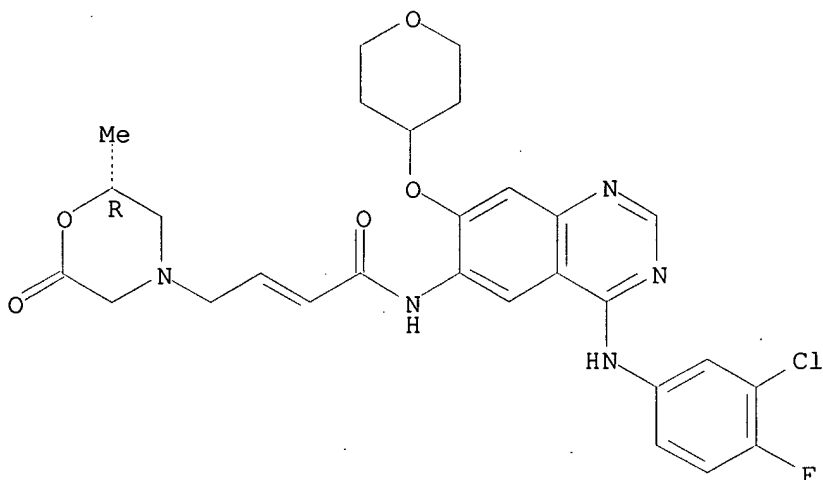


RN 402855-64-5 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-)]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

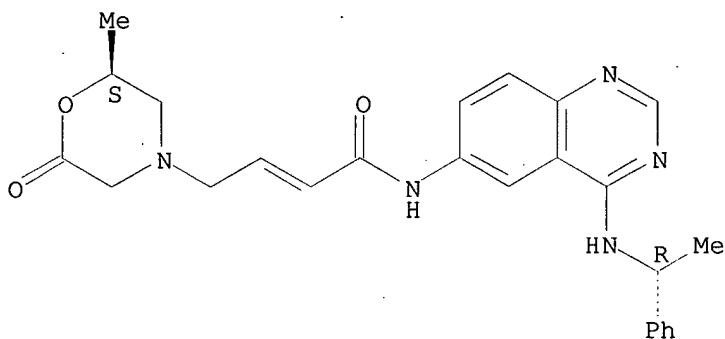
pyran-4-yl)oxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



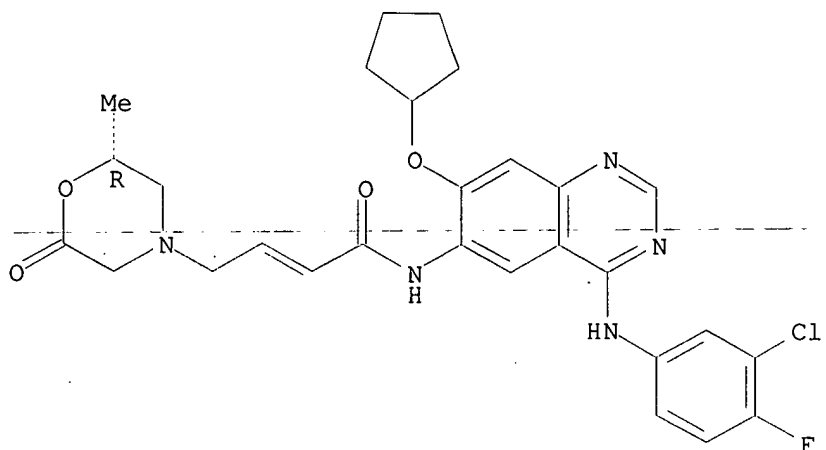
RN 402855-65-6 USPATFULL  
CN 2-Butenamide, 4-[(2S)-2-methyl-6-oxo-4-morpholinyl]-N-[4-[(1R)-1-phenylethyl]amino]-6-quinazolinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-66-7 USPATFULL  
CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-(cyclopentyloxy)-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

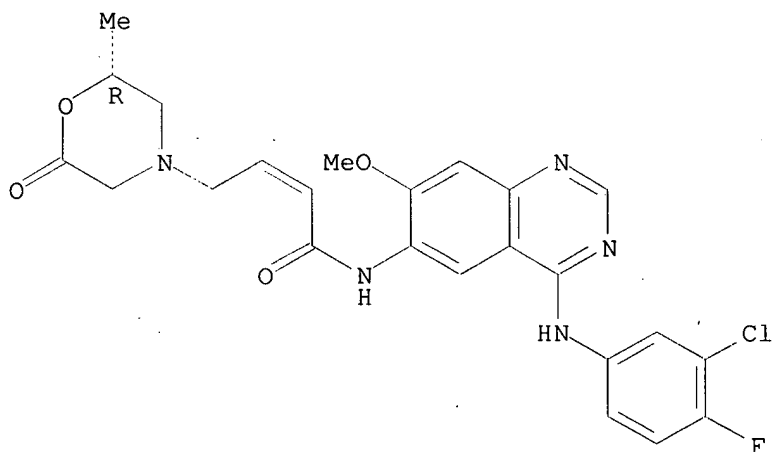
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-67-8 USPATFULL

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Absolute stereochemistry.  
Double bond geometry unknown.

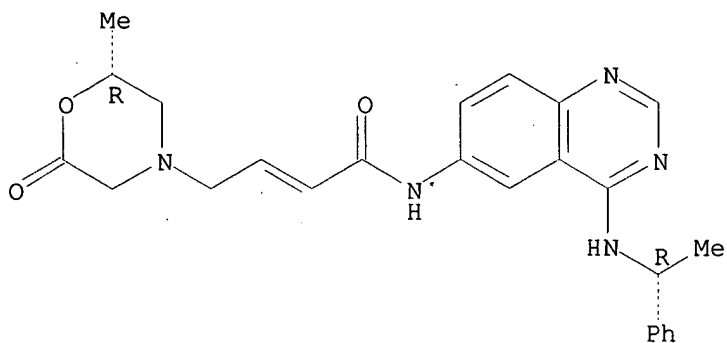


RN 402855-68-9 USPATFULL

CN 2-Butenamide, 4-[(2R)-2-methyl-6-oxo-4-morpholinyl]-N-[4-[(1R)-1-phenylethyl]amino]-6-quinazolinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

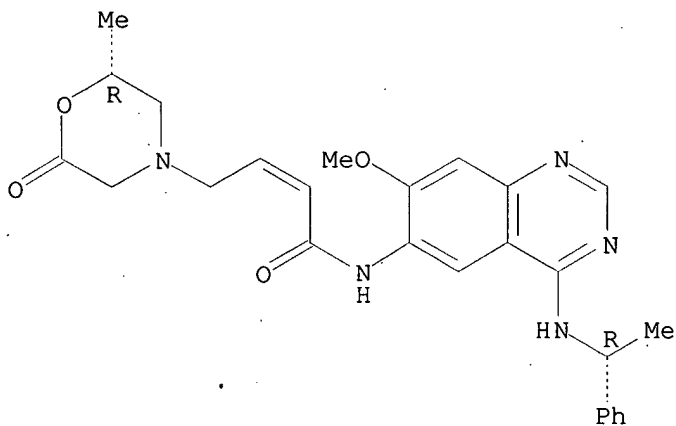




RN 402855-69-0 USPATFULL

CN 2-Butenamide, N-[7-methoxy-4-[[[(1R)-1-phenylethyl]amino]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

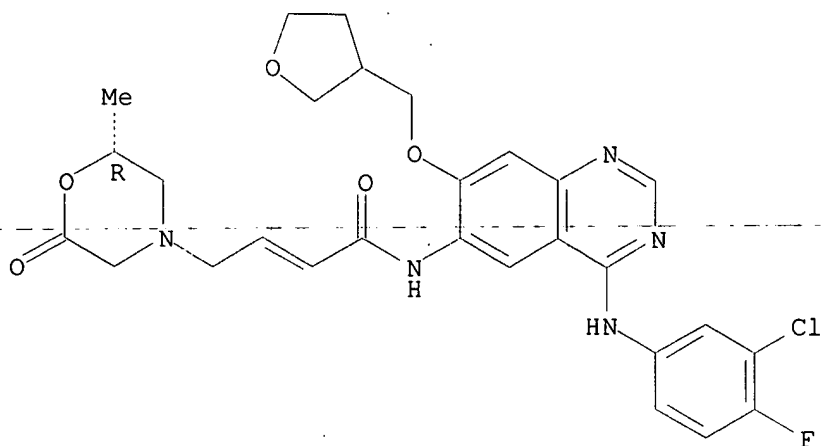
Absolute stereochemistry.  
Double bond geometry unknown.



RN 402855-70-3 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-3-furanyl)methoxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.

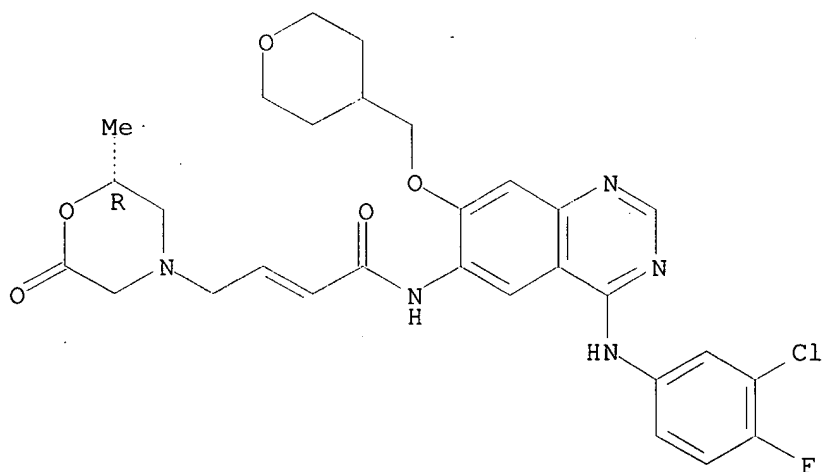


RN 402855-71-4 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)methoxy]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

Double bond geometry unknown.

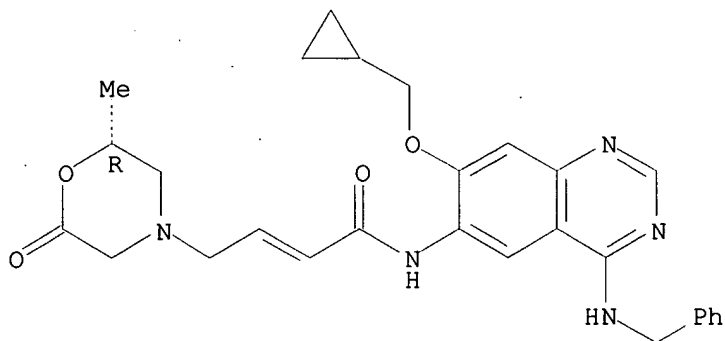


RN 402855-72-5 USPATFULL

CN 2-Butenamide, N-[7-(cyclopropylmethoxy)-4-[(phenylmethyl)amino]-6-quinazolinyl]-4-[(2R)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

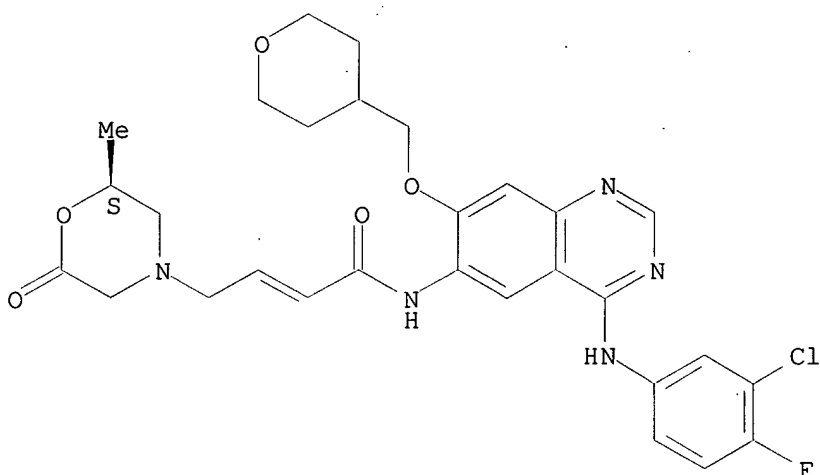
Double bond geometry unknown.



RN 402855-73-6 USPATFULL

CN 2-Butenamide, N-[4-[(3-chloro-4-fluorophenyl)amino]-7-[(tetrahydro-2H-pyran-4-yl)methoxy]-6-quinazolinyl]-4-[(2S)-2-methyl-6-oxo-4-morpholinyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry unknown.



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 | \\
 \text{Benzene ring} \\
 | \quad | \\
 NR_c - CO - A - B - C \quad D - E
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 \quad , (I)$$

$R_a$  denotes a hydrogen atom or a methyl group,

R<sub>b</sub> denotes a phenyl, benzyl- or 1-phenylethyl group wherein the phenyl nucleus is substituted in each case by the groups R<sub>1</sub> to R<sub>3</sub>, while

R<sub>1</sub> and R<sub>2</sub>, which may be identical or different, in each case denote a hydrogen, fluorine, chlorine, bromine or iodine atom,

a methyl, ethyl, hydroxy, methoxy, ethoxy, amino, cyano, vinyl or ethynyl group,

an aryl, aryloxy, arylmethyl or arylmethoxy group,

a methyl or methoxy group substituted by 1 to 3 fluorine atoms or

R<sub>1</sub> together with R<sub>2</sub>, if they are bound to adjacent carbon atoms, denote a -CH=CH-CH=CH-, -CH=CH-NH- or -CH=N-NH group and

**R<sub>3</sub> denotes a hydrogen, fluorine, chlorine or bromine atom,**

$R_c$  denotes a hydrogen atom or a methyl group,

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X denotes a methyne group substituted by a cyano group or a nitrogen atom,

A denotes a 1,1- or 1,2-vinylene group which may be substituted in each case by one or two methyl groups or by a trifluoromethyl group,

5

an ethynylene group or

a 1,3-butadien-1,4-ylene group optionally substituted by a methyl or trifluoromethyl group,

10 B denotes an alkylene or -CO-alkylene group wherein the alkylene moiety in each case contains 1 to 4 carbon atoms, while the linking of the -CO-alkylene group to the adjacent group A in each case must take place via the carbonyl group,

15 a -CO-O-alkylene- or -CO-NR<sub>4</sub>-alkylene group wherein the alkylene moiety in each case contains 1 to 4 carbon atoms, while the linking to the adjacent group A in each case must take place via the carbonyl group, wherein

R<sub>4</sub> denotes a hydrogen atom or a methyl or ethyl group,

20 or a carbonyl group,

C denotes a 2-oxo-morpholin-4-yl group substituted by the group R<sub>5</sub> or by the group R<sub>5</sub> and a C<sub>1-4</sub>-alkyl group, while

25 R<sub>5</sub> denotes a C<sub>3-4</sub>-alkyl, hydroxy-C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkoxy-C<sub>1-4</sub>-alkyl, di-(C<sub>1-4</sub>-alkyl)-amino-C<sub>1-4</sub>-alkyl, pyrrolidino-C<sub>1-4</sub>-alkyl, piperidino-C<sub>1-4</sub>-alkyl, morpholino-C<sub>1-4</sub>-alkyl, 4-(C<sub>1-4</sub>-alkyl)-piperazino-C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkylsulphanyl-C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkylsulphinyl-C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkylsulphonyl-C<sub>1-4</sub>-alkyl, cyano-C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkoxycarbonyl-C<sub>1-4</sub>-alkyl, aminocarbonyl-C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkyl-aminocarbonyl-C<sub>1-4</sub>-alkyl, di-(C<sub>1-4</sub>-alkyl)aminocarbonyl-C<sub>1-4</sub>-alkyl, pyrrolidinocarbonyl-C<sub>1-4</sub>-alkyl, piperidinocarbonyl-

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C<sub>1-4</sub>-alkyl, morpholinocarbonyl-C<sub>1-4</sub>-alkyl or a 4-(C<sub>1-4</sub>-alkyl)-piperazinocarbonyl-C<sub>1-4</sub>-alkyl group,

5 a 2-oxo-morpholin-4-yl group substituted by two groups R<sub>5</sub>, where R<sub>5</sub> is as hereinbefore defined and the two groups R<sub>5</sub> may be identical or different,

a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a -(CH<sub>2</sub>)<sub>m</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>-CH<sub>2</sub>, -CH<sub>2</sub>CH<sub>2</sub>-Y-CH<sub>2</sub>CH<sub>2</sub>- or -CH<sub>2</sub>CH<sub>2</sub>-Y-CH<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>- bridge optionally substituted by one or two C<sub>1-2</sub>-alkyl groups,  
10 while

m denotes the number 2, 3, 4, 5 or 6 and

Y denotes an oxygen or sulphur atom, a sulphinyl, sulphonyl or C<sub>1-4</sub>-alkylimino group,

15 a 2-oxo-morpholin-4-yl group, wherein a hydrogen atom in the 5 position together with a hydrogen atom in the 6 position is replaced by a -(CH<sub>2</sub>)<sub>n</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>CH<sub>2</sub>- or -CH<sub>2</sub>CH<sub>2</sub>-Y-CH<sub>2</sub>-bridge, while

Y is as hereinbefore defined and

20 n denotes the number 2, 3 or 4,

or, if D together with E denotes a group R<sub>d</sub>, it may also denote a 2-oxo-morpholin-4-yl group which may be substituted by 1 to 4 C<sub>1-2</sub>-alkyl groups,

25 D denotes a -O-C<sub>1-6</sub>-alkylene group, while the alkylene moiety is linked to the group E, or an oxygen atom, while this may not be linked to a nitrogen atom of the group E, and

E denotes an amino group substituted by 2 C<sub>1-4</sub>-alkyl groups, wherein the alkyl groups may  
30 be identical or different and each alkyl moiety may be substituted from the 2 position by a C<sub>1-4</sub>-alkoxy or di-(C<sub>1-4</sub>-alkyl)-amino group or by a 4- to 7-membered alkyleneimino group,

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while in the abovementioned 6- to 7-membered alkyleneimino groups in each case a methylene group may be replaced in the 4 position by an oxygen or sulphur atom or by a sulphinyl, sulphonyl- or N-(C<sub>1-4</sub>-alkyl)-imino group,

5 a 4- to 7-membered alkyleneimino group optionally substituted by 1 to 4 methyl groups,

a 6- to 7-membered alkyleneimino group optionally substituted by 1 or 2 methyl groups, wherein in each case a methylene group in the 4 position is replaced by an oxygen or sulphur atom or by a sulphinyl, sulphonyl- or N-(C<sub>1-4</sub>-alkyl)-imino group,

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an imidazolyl group optionally substituted by 1 to 3 methyl groups,

a C<sub>5-7</sub>-cycloalkyl group, wherein a methylene group is replaced by an oxygen or sulphur atom or by a sulphinyl, sulphonyl or N-(C<sub>1-4</sub>-alkyl)-imino group, or

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D together with E denotes a hydrogen atom,

a C<sub>1-6</sub>-alkoxy group optionally substituted from the 2 position by a hydroxy- or C<sub>1-4</sub>-alkoxy group,

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a C<sub>3-7</sub>-cycloalkoxy- or C<sub>3-7</sub>-cycloalkyl-C<sub>1-4</sub>-alkoxy group,

or a group R<sub>d</sub>, where

25 R<sub>d</sub> denotes a C<sub>2-6</sub>-alkoxy group which is substituted from the 2 position by a C<sub>4-7</sub>-cycloalkoxy- or C<sub>3-7</sub>-cycloalkyl-C<sub>1-3</sub>-alkoxy group,

a C<sub>4-7</sub>-cycloalkoxy- or C<sub>3-7</sub>-cycloalkyl-C<sub>1-6</sub>-alkoxy group wherein the cycloalkyl moiety in each case is substituted by a C<sub>1-4</sub>-alkyl, C<sub>1-4</sub>-alkoxy, di-(C<sub>1-4</sub>-alkyl)-amino, pyrrolidino, 30 piperidino, morpholino, piperazino, 4-(C<sub>1-2</sub>-alkyl)-piperazino, C<sub>1-4</sub>-alkoxy-C<sub>1-2</sub>-alkyl, di-(C<sub>1-4</sub>-alkyl)-amino-C<sub>1-2</sub>-alkyl, pyrrolidino-C<sub>1-2</sub>-alkyl, piperidino-C<sub>1-2</sub>-alkyl, morpholino-

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C<sub>1-2</sub>-alkyl, piperazino-C<sub>1-2</sub>-alkyl- or 4-(C<sub>1-2</sub>-alkyl)-piperazino-C<sub>1-2</sub>-alkyl group, while the abovementioned cycloalkyl moieties may additionally be substituted by a methyl or ethyl group,

- 5 while, unless otherwise stated, by the aryl moieties mentioned in the definition of the abovementioned groups is meant a phenyl group which may be mono- or disubstituted by R<sub>6</sub>, while the substituents may be identical or different and

R<sub>6</sub> denotes a fluorine, chlorine, bromine or iodine atom, a C<sub>1-2</sub>-alkyl, trifluoromethyl or C<sub>1-2</sub>-alkoxy group, or

two groups R<sub>6</sub>, if they are bound to adjacent carbon atoms, together represent a C<sub>3-4</sub>-alkylene, methylenedioxy or 1,3-butadien-1,4-ylene group,

- 15 or a tautomer or salt thereof.

2. A compound of the formula I according to claim 1, wherein

R<sub>a</sub> denotes a hydrogen atom,

20

R<sub>b</sub> denotes a benzyl or 1-phenylethyl group or a phenyl group substituted by the groups R<sub>1</sub> and R<sub>2</sub>, while

- R<sub>1</sub> denotes a hydrogen, fluorine, chlorine or bromine atom, a methyl, trifluoromethyl, cyano or ethynyl group and

25

R<sub>2</sub> denotes a hydrogen or fluorine atom,

R<sub>c</sub> denotes a hydrogen atom,

- 30 X denotes a nitrogen atom,

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A denotes a 1,2-vinylene group,

B denotes a C<sub>1-4</sub>-alkylene group,

- 5 C denotes a 2-oxo-morpholin-4-yl group substituted by the group R<sub>5</sub> or by the group R<sub>5</sub> and a C<sub>1-4</sub>-alkyl group, while

R<sub>5</sub> denotes a C<sub>3-4</sub>-alkyl, C<sub>1-2</sub>-alkoxy-C<sub>1-4</sub>-alkyl, di-(C<sub>1-2</sub>-alkyl)-amino-C<sub>1-4</sub>-alkyl, pyrrolidino-C<sub>1-4</sub>-alkyl, piperidino-C<sub>1-4</sub>-alkyl, morpholino-C<sub>1-4</sub>-alkyl, 4-(C<sub>1-2</sub>-alkyl)-

- 10 piperazino-C<sub>1-4</sub>-alkyl, C<sub>1-2</sub>-alkylsulphanyl-C<sub>1-4</sub>-alkyl, C<sub>1-2</sub>-alkylsulphinyl-C<sub>1-4</sub>-alkyl, C<sub>1-2</sub>-alkylsulphonyl-C<sub>1-4</sub>-alkyl, cyano-C<sub>1-4</sub>-alkyl, C<sub>1-2</sub>-alkoxycarbonyl-C<sub>1-4</sub>-alkyl, aminocarbonyl-C<sub>1-4</sub>-alkyl, C<sub>1-2</sub>-alkyl-aminocarbonyl-C<sub>1-4</sub>-alkyl, di-(C<sub>1-2</sub>-alkyl)-aminocarbonyl-C<sub>1-4</sub>-alkyl, pyrrolidinocarbonyl-C<sub>1-4</sub>-alkyl, piperidinocarbonyl-C<sub>1-4</sub>-alkyl, morpholinocarbonyl-C<sub>1-4</sub>-alkyl- or a 4-(C<sub>1-2</sub>-alkyl)-piperazinocarbonyl-C<sub>1-4</sub>-alkyl group,

- 15 a 2-oxo-morpholin-4-yl group substituted by two groups R<sub>5</sub>, while R<sub>5</sub> is as hereinbefore defined and the two groups R<sub>5</sub> may be identical or different,

- 20 a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a -(CH<sub>2</sub>)<sub>m</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>-CH<sub>2</sub>- or -CH<sub>2</sub>CH<sub>2</sub>-Y-CH<sub>2</sub>CH<sub>2</sub>-bridge, while

m denotes the number 2, 3, 4 or 5 and

Y denotes an oxygen or sulphur atom, a sulphinyl, sulphonyl or C<sub>1-2</sub>-alkylimino group,

- 25 a 2-oxo-morpholin-4-yl group, wherein a hydrogen atom in the 5 position together with a hydrogen atom in the 6 position is replaced by a -(CH<sub>2</sub>)<sub>n</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>, -CH<sub>2</sub>-Y-CH<sub>2</sub>CH<sub>2</sub>- or -CH<sub>2</sub>CH<sub>2</sub>-Y-CH<sub>2</sub>-bridge, where

- 30 Y is as hereinbefore defined and  
n denotes the number 2, 3 or 4,

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or, if D together with E denotes a group  $R_d$ , it may also denote a 2-oxo-morpholin-4-yl group which may be substituted by 1 or 2 methyl or ethyl groups,

- 5 D denotes a  $-O-C_{1-4}$ -alkylene group, while the alkylene moiety is linked to the group E, and

E denotes a dimethylamino, diethylamino, pyrrolidino, piperidino, morpholino, 4-methyl-piperazino- or 4-ethyl-piperazino group or

10

D together with E denotes a hydrogen atom,

a methoxy, ethoxy, 2-methoxy-ethoxy, 3-methoxy-propyloxy, tetrahydrofuran-3-yloxy, tetrahydropyran-3-yloxy, tetrahydropyran-4-yloxy, tetrahydrofuranylmethoxy or

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tetrahydropyranylmethoxy group,

a cyclobutyloxy, cyclopentyloxy, cyclohexyloxy, cyclopropylmethoxy, cyclobutylmethoxy, cyclopentylmethoxy or cyclohexylmethoxy group or

20

a group  $R_d$ , where

$R_d$  denotes a 2-(cyclobutyloxy)-ethoxy, 2-(cyclopentyloxy)-ethoxy, 2-(cyclopropylmethoxy)-ethoxy or 2-(cyclobutylmethoxy)-ethoxy group,

25

or a tautomer or salt thereof.

3. A compound of the formula I according to claim 1, wherein

$R_a$  denotes a hydrogen atom,

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$R_b$  denotes a 1-phenylethyl, 3-methylphenyl, 3-chlorophenyl, 3-bromophenyl- or 3-chloro-4-fluorophenyl group,

$R_c$  denotes a hydrogen atom,

5

X denotes a nitrogen atom,

A denotes a 1,2-vinylene group,

10 B denotes a methylene group,

C denotes a 2-oxo-morpholin-4-yl group which is substituted by a methoxymethyl, methoxyethyl, ethoxymethyl, ethoxyethyl, dimethylaminomethyl, dimethylaminoethyl, diethylaminomethyl, diethylaminoethyl, cyanomethyl or cyanoethyl group,

15

a 2-oxo-morpholin-4-yl group, wherein the two hydrogen atoms of a methylene group are replaced by a  $-\text{CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{-O-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{-NCH}_3\text{-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{-NC}_2\text{H}_5\text{-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{-O-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{-NCH}_3\text{-CH}_2\text{CH}_2$ - or  $-\text{CH}_2\text{CH}_2\text{-NC}_2\text{H}_5\text{-CH}_2\text{CH}_2$ - bridge,

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a 2-oxo-morpholin-4-yl group, wherein a hydrogen atom in the 5 position together with a hydrogen atom in the 6 position is replaced by a  $-\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{-O-CH}_2$ ,  $-\text{CH}_2\text{-NCH}_3\text{-CH}_2$ ,  $-\text{CH}_2\text{-NC}_2\text{H}_5\text{-CH}_2$ ,  $-\text{CH}_2\text{-O-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{-NCH}_3\text{-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{-NC}_2\text{H}_5\text{-CH}_2\text{CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{-O-CH}_2$ ,  $-\text{CH}_2\text{CH}_2\text{-NCH}_3\text{-CH}_2$ - or  $-\text{CH}_2\text{CH}_2\text{-NC}_2\text{H}_5\text{-CH}_2$ - bridge,

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or, if D together with E denotes a group  $R_d$ , it may also denote a 2-oxo-morpholin-4-yl group which is substituted by 1 or 2 methyl groups, and

30 D together with E denotes a hydrogen atom,

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a methoxy, ethoxy, 2-methoxy-ethoxy, 3-methoxy-propyloxy, tetrahydrofuran-3-yloxy, tetrahydropyran-4-yloxy or tetrahydrofuranylmethoxy group,

a cyclobutyloxy, cyclopentyloxy, cyclopropylmethoxy, cyclobutylmethoxy or  
5 cyclopentylmethoxy group or

a group  $R_d$ , where

$R_d$  denotes a 2-(cyclobutyloxy)-ethoxy, 2-(cyclopentyloxy)-ethoxy,  
10 2-(cyclopropylmethoxy)-ethoxy or 2-(cyclobutylmethoxy)-ethoxy group,

or a tautomer or salt thereof.

4. A compound of the formula I according to claim 1, wherein  
15

$R_a$  denotes a hydrogen atom,

$R_b$  denotes a 3-chloro-4-fluorophenyl group,

20  $R_c$  denotes a hydrogen atom,

X denotes a nitrogen atom,

A denotes a 1,2-vinylene group,  
25

B denotes a methylene group,

C denotes a 2-oxo-morpholin-4-yl group which is substituted by a methoxymethyl or methoxyethyl group, or  
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amount of a compound according claim 1, 2, 3, 4 or 5 or a pharmaceutically acceptable salt thereof.

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